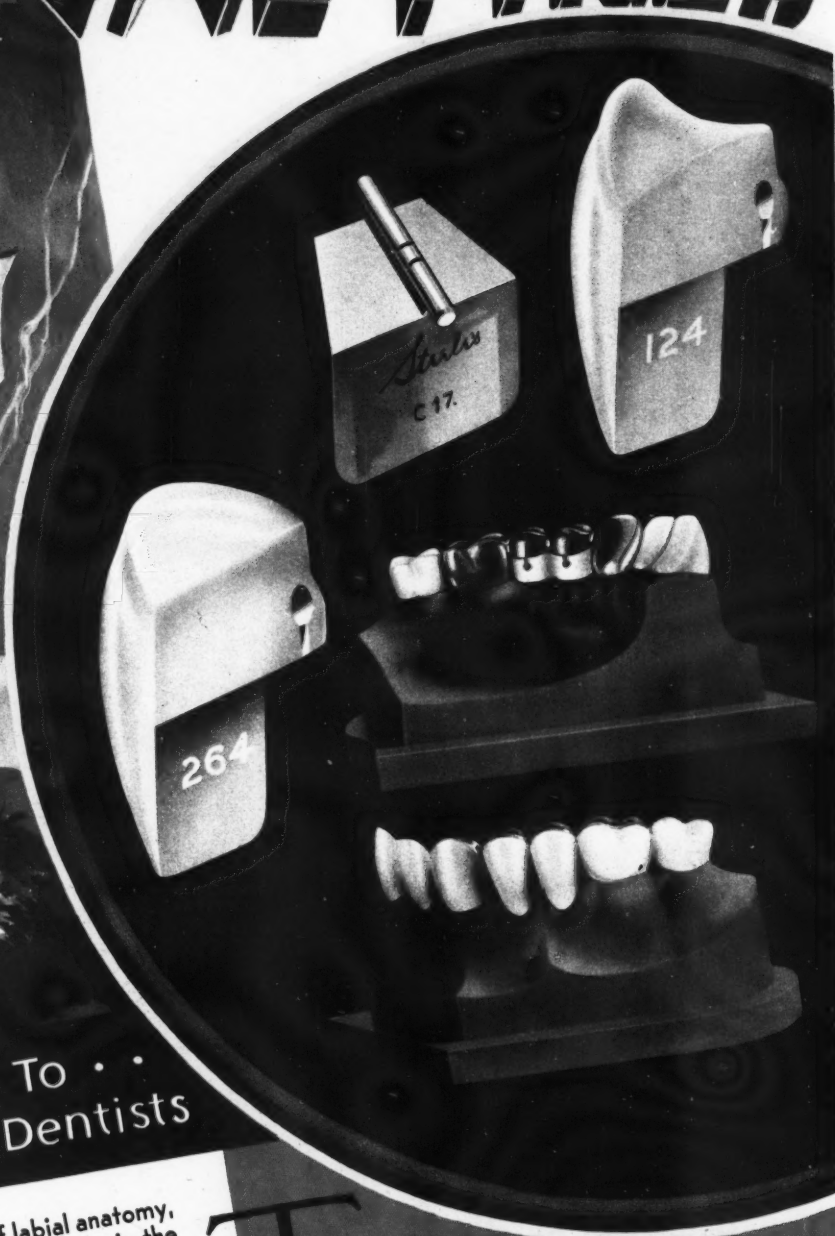


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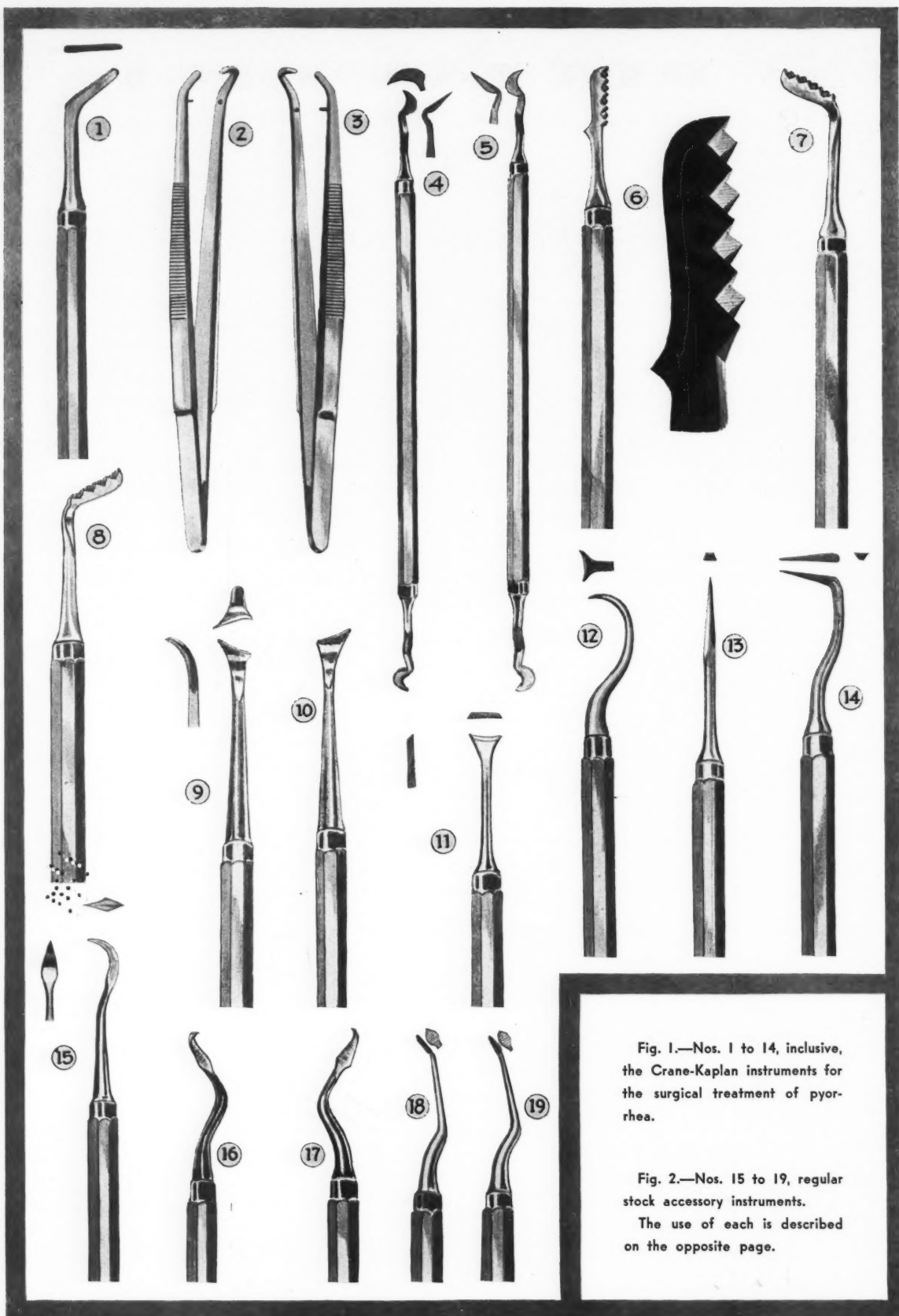
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THE TECHNIQUE AND RESULTS OF SURGICAL PYORRHEA TREATMENT

ARTHUR B. CRANE, D.D.S. and HARRY KAPLAN, D.D.S.
Washington, D. C.

THE most important feature of any operation is the diagnosis, for unless this is correct all subsequent procedures become empirical. The mere observation of the mouth is not sufficient to indicate the presence of pyorrhea alveolaris. The gums may appear of normal color, position, and consistency and yet, if simultaneous digital pressure is made on the two sides of the alveolar tissues, there may be a flow of exudate from beneath the gingivae. In some instances, even though no visible pus may be demonstrated, careful exploration with a blunt instrument will disclose a lack of attachment of the soft tissues.

The most satisfactory method of diagnosis is made in conjunction with a roentgen examination. The exposure should be made at such an angle that the interproximal spaces are depicted in their true proportions. When this is done it will frequently be found that that which to ocular examination appears to be healthy has a bone destroying process established in the interproximal septa. On the other hand, in cases in which a considerable recession of the gum or even an inflammation of the gingival margin is shown, there may be no disease in the bone whatever. The accompanying roentgenograms represent a study of various conditions that are commonly found in the interproximal septum.

The depth of the pockets and the amount of supporting bone which has been destroyed having been determined through clinical study and roentgenologic check, one will be able

to decide whether surgical intervention is indicated. The prognosis is largely affected adversely by traumatic occlusion which cannot be corrected, or by lack of established habits of mouth cleanliness.

Many instruments have been devised for the surgical treatment of pyorrhea. Figures 1 and 2 show a new set of instruments to be used in the operation described here.

OPERATION

The outstanding feature of this operation consists in the facility with which all possible normal tissue is conserved while all diseased tissue is eliminated. The suggestion of a cement packing by Ward is the one feature which has made operations of this kind more feasible. The pack used here is the United States Army formula and consists of equal parts of finely bolted resin and oxide of zinc as the powder which is mixed with equal parts of eugenol and heavy mineral oil as the liquid. The resin serves to make the packing more dense. The oxide of zinc is the solidifying agent. The eugenol acts as an

analgesic and antiseptic. The heavy mineral oil forms a film which prevents the packing from actually sticking to the tissues, thereby establishing a vent for the escape of postoperative seepage. The packing serves as a splint to immobilize the parts on which the operation is performed in order to prevent traumatism and the ingress of infection. It also acts upon the newly exposed surfaces of the teeth as a desensitizer, preventing to a large extent postoperative sensitiveness of the teeth.

The cement is mixed stiff and packed tightly in the interproximal spaces and over all cut surfaces. It is left in place for about ten days. When it is removed the operative field will be covered with new connective tissue. It takes from a week to ten days more for the surfaces to become covered with new epithelium. During this period the patient should be instructed to massage a good soapy tooth paste into the cut surfaces with the fingertip. As soon as the epithelium has covered the denuded surfaces, a stiff tooth brush should be substituted for the fingertip when the tooth paste is used. At first it may be necessary to soften the bristles in hot water but as soon as possible the brush used should be stiff and dry. Within reason, the rougher the gums are treated the better. The patient should be especially instructed to force the bristles downward in the interproximal spaces, packing the gums against the bone. Figures 4 to 14 inclusive show the operative procedure. Figures 15 to 27 inclusive show postoperative results.

See illustrations
on following
pages

(See opposite page) Fig. 1.—The Crane-Kaplan instruments for the surgical treatment of pyorrhea: (1) Pyorrhea explorer for sounding the depth of the pockets; (2) and (3) pocket-marking forceps for making bleeding points; (4) and (5) gingival knives, right and left with blunt dissectors of similar shape on the opposite end, used for connecting the bleeding points and removing the gum flaps; (6), (7), and (8) interproximal saws for breaking up the diseased bone in the interproximal spaces. These instruments cut with both a push and pull motion; (9), (10), (11), and (12) scalers and marginal tissue trimmers, used to bevel the bone on the labio-buccal and lingual surfaces of the teeth and to trim off unattached segments of gum tissue; (13) and (14) spear-pointed chisels used for breaking down the diseased bone in interproximal spaces which are too narrow to admit the saws.

Fig. 2.—Regular stock accessory instruments: Hawk-beak scalers [straight (15), right (16), and left (17)] used to level the interproximal bone and complete the scaling. Thompkins prophylactic files (18 and 19) used for final finishing of bone and teeth.

Fig. 3.—Roentgenographic diagnosis. (A) Normal interproximal septum. The crest comes to a point near the enamel line of the teeth. The cortical bone covering it is continuous with the lamina dura of the adjacent tooth sockets. (B) Normal recession of the interproximal septum. Through wear and tear the point of the crest becomes flattened and recedes but the cortical bone covering it still forms a continuous unbroken line with the lamina dura of the adjacent tooth sockets. Both A and B are normal and indicate the absence of interproximal pyorrhea. The depth of the gingival crevice in either condition would be normal. (C) Simplex pyorrhea pocket. There is a rarefaction of the crest accompanied by the wasting of the lamina dura of the adjacent tooth sockets. (D) Complex pyorrhea pocket. There is a deep lateral destruction of the alveolar crest with a wasting of the lamina dura approximating one of the adjacent roots, while the lamina dura of the other remains practically normal. (E) Combination of simplex and complex pockets. The destruction of the alveolar crest with a deep lateral destruction along one root. (F) Advanced combination pocket. There is a wide destruction of the alveolar process completely surrounding the root. (G) An unclassified pyorrhea pocket. The cortical bone covering the interproximal septum has disappeared and the bone destruction proceeds between the sockets without destroying the lamina dura of either. (H) Necrosis of the interproximal septum. Sequestra are thrown off in the destructive process. (I) Osteoporosis. This often precedes the area of bone destruction but is not in itself a pathologic condition. (J) Defensive reaction in the simplex pocket. Many cases will be found in which there is a condensation of the alveolar bone in advance of the destructive process. (K) Defensive reaction in the complex pocket, similar to J. (L) Disappearance of the lamina dura about the tooth apex caused by occlusal traumatism and is not to be confused with periapical disease.

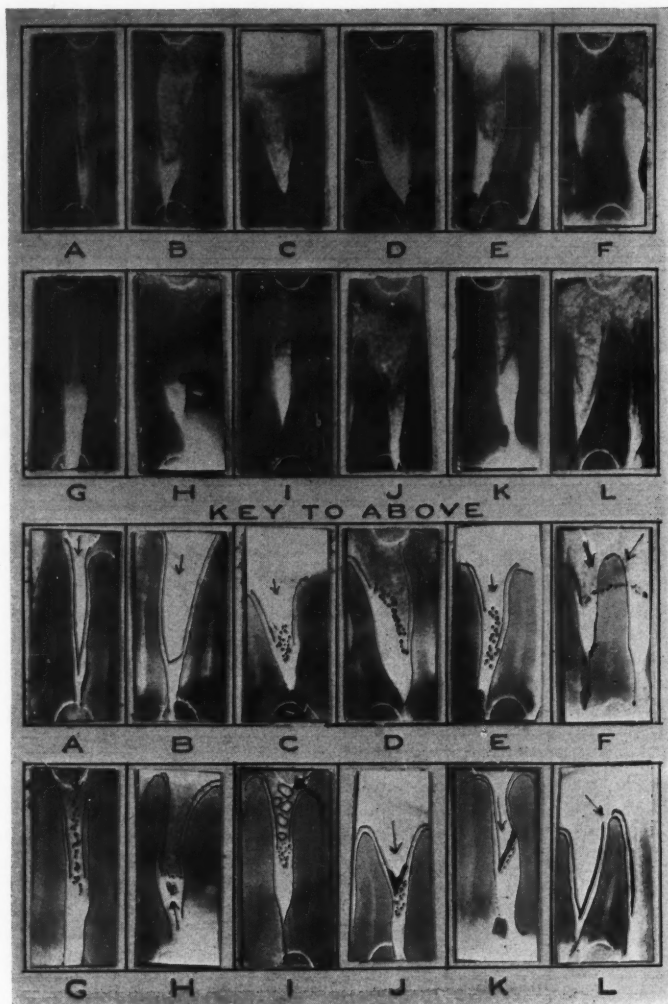


Fig. 3.

Fig. 4.—Panoramic roentgenogram in same case as succeeding illustrations.

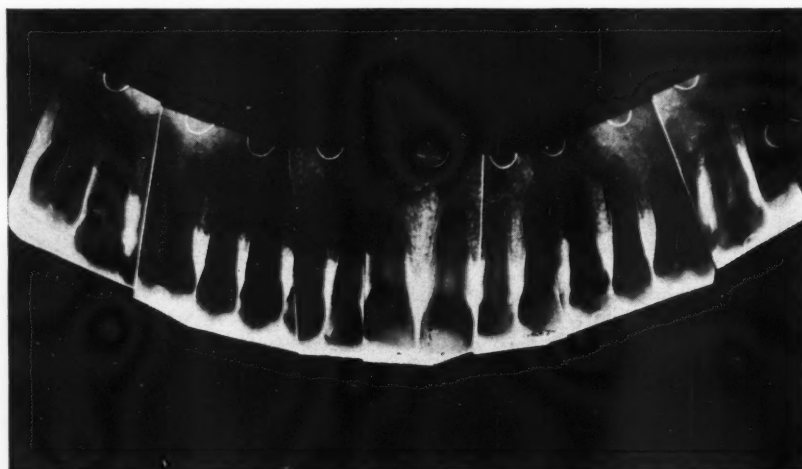


Fig. 4.

Fig. 5—Establishing the depth of the labio-buccal and lingual pockets by means of the pocket-marking forceps which leave bleeding points.



Fig. 6—The bleeding points have been connected by an incision with the gingival knife and the strip of diseased gum is being removed with the blunt dissector.

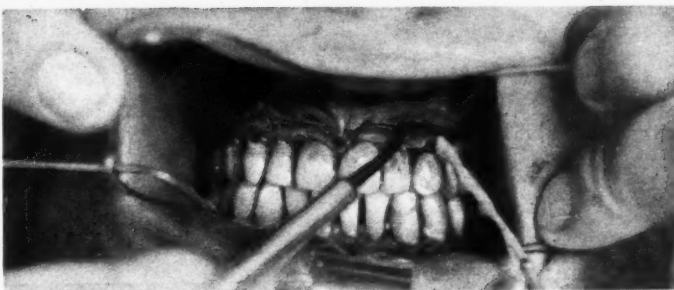


Fig. 7—The interproximal saws being used to break down the diseased bone. In some places the interproximal pockets are deeper than the labio-buccal or lingual pockets and in these cases the saws will leave a perpendicular cut in the soft tissues.

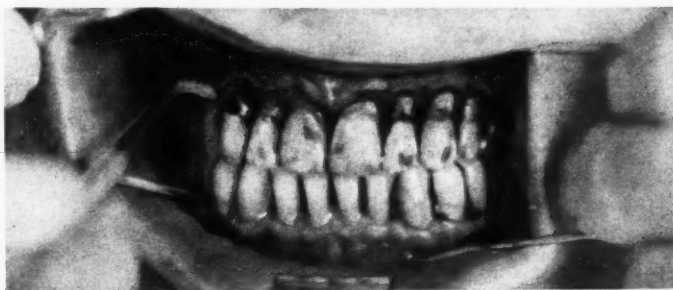


Fig. 8—The interproximal debris and serum and salivary calculus being removed with the scalars.

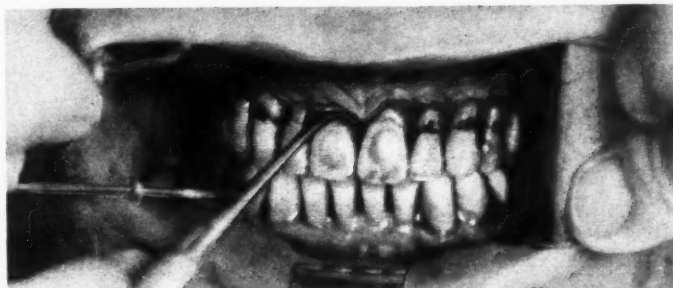


Fig. 9—Unsupported gum segments being removed with the scalars.





Fig. 10—Leveling the interproximal bone and completing the scaling with hawk-beak scalars.

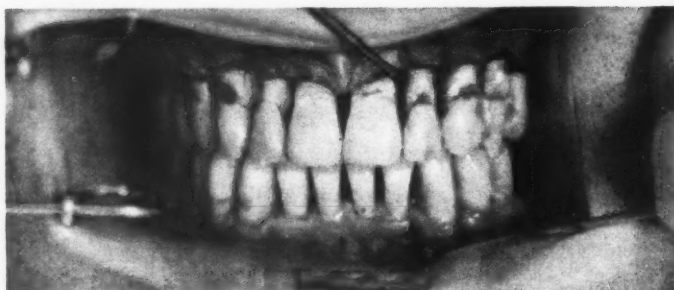


Fig. 11—Smoothing bone and teeth with prophylactic files.



Fig. 12—Right side of mouth after completion of operation.



Fig. 13—Left side of mouth after completion of operation.



Fig. 14—Operative field packed. Patient ready for dismissal.



POSTOPERATIVE RESULTS

Fig. 15.—The upper jaw shows the appearance of the gums immediately upon the removal of pack. Lower jaw shows the appearance of the tissues two weeks after the removal of the pack.

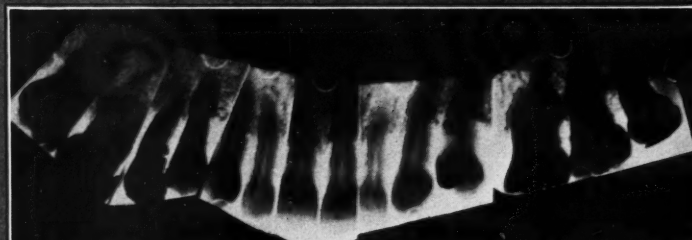
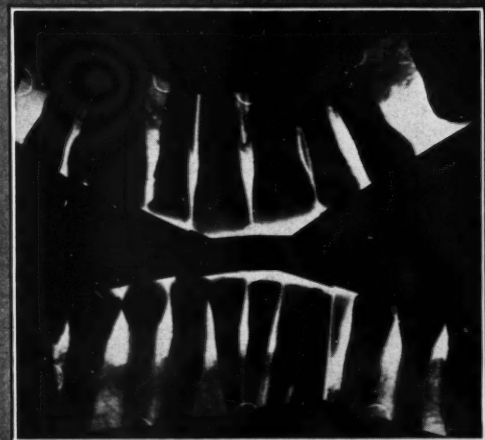


Fig. 16.—The lower jaw shows the appearance of the gums five weeks after removal of the pack. The upper jaw ten days after removal of the pack. The roentgenograms give an idea of the established nature of the disease in this case in which the patient was very young with exceptionally good mouth hygiene.



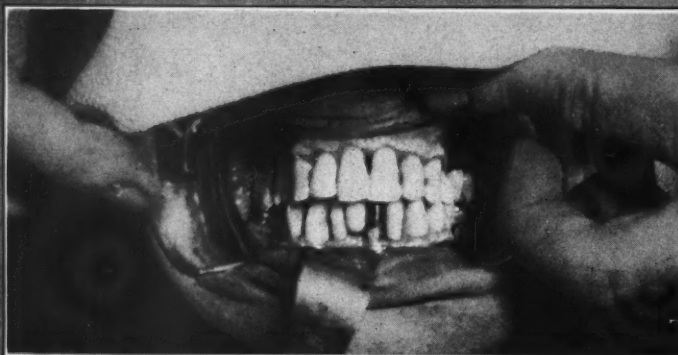
Fig. 17 (A and B).—Appearance about one month after removal of the pack, the upper jaw being a few days older than the lower. Roentgenograms show a normal interproximal septum between the upper central incisors. Tissues were not disturbed at this point.



17-A



17-B



18



19



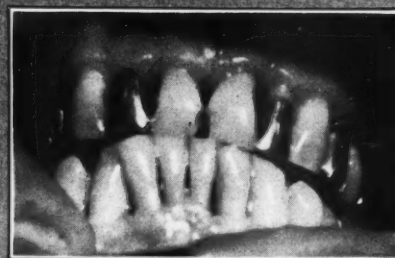
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Fig. 18.—Lower jaw immediately after removal of pack. Upper jaw, three weeks after removal of pack.

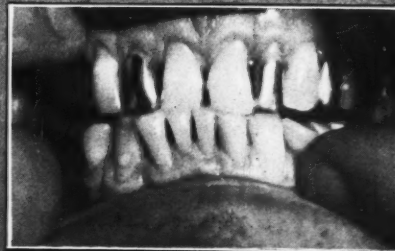
Fig. 19.—Same case as in Fig. 18. Six weeks later. Note progress in formation of interproximal gingivae.

Fig. 20.—Same as in figures 18 and 19 about nine months after operation.

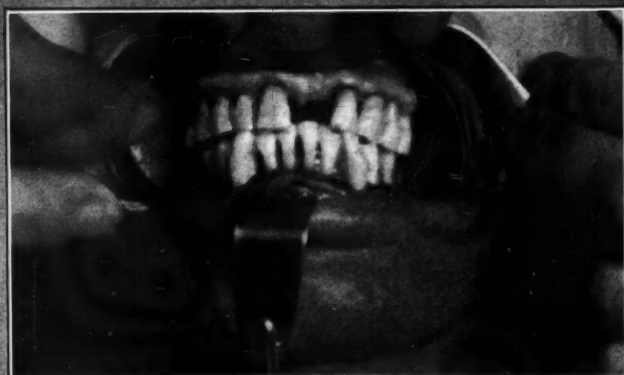
Another case.—(A), upper jaw three weeks after removal of pack. Lower jaw immediately after removal of pack. (B), same case fourteen months later.



A



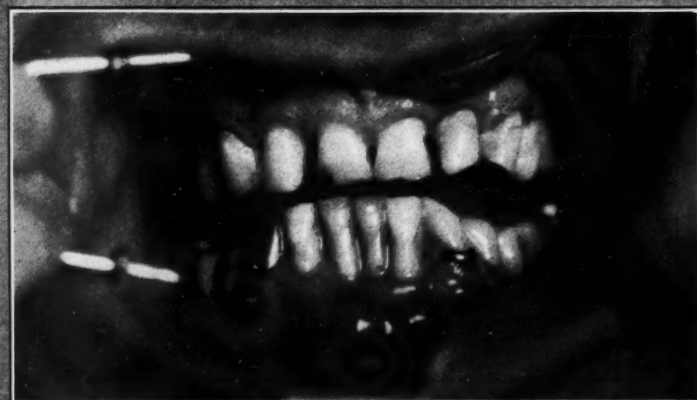
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22



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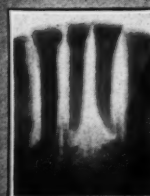
Fig. 21.—Lower jaw immediately after removal of pack. Upper jaw six months after removal of pack.

Fig. 22.—Appearance one year after operation. Note the complete regeneration of interproximal gingivae.

Fig. 23.—Appearance of both jaws about a year after operation. Roentgenograms show almost complete destruction of the alveolar process about the lower incisors yet the gums remain firm and healthy. (A), appearance before operation; (B), appearance one year after operation.



A



B

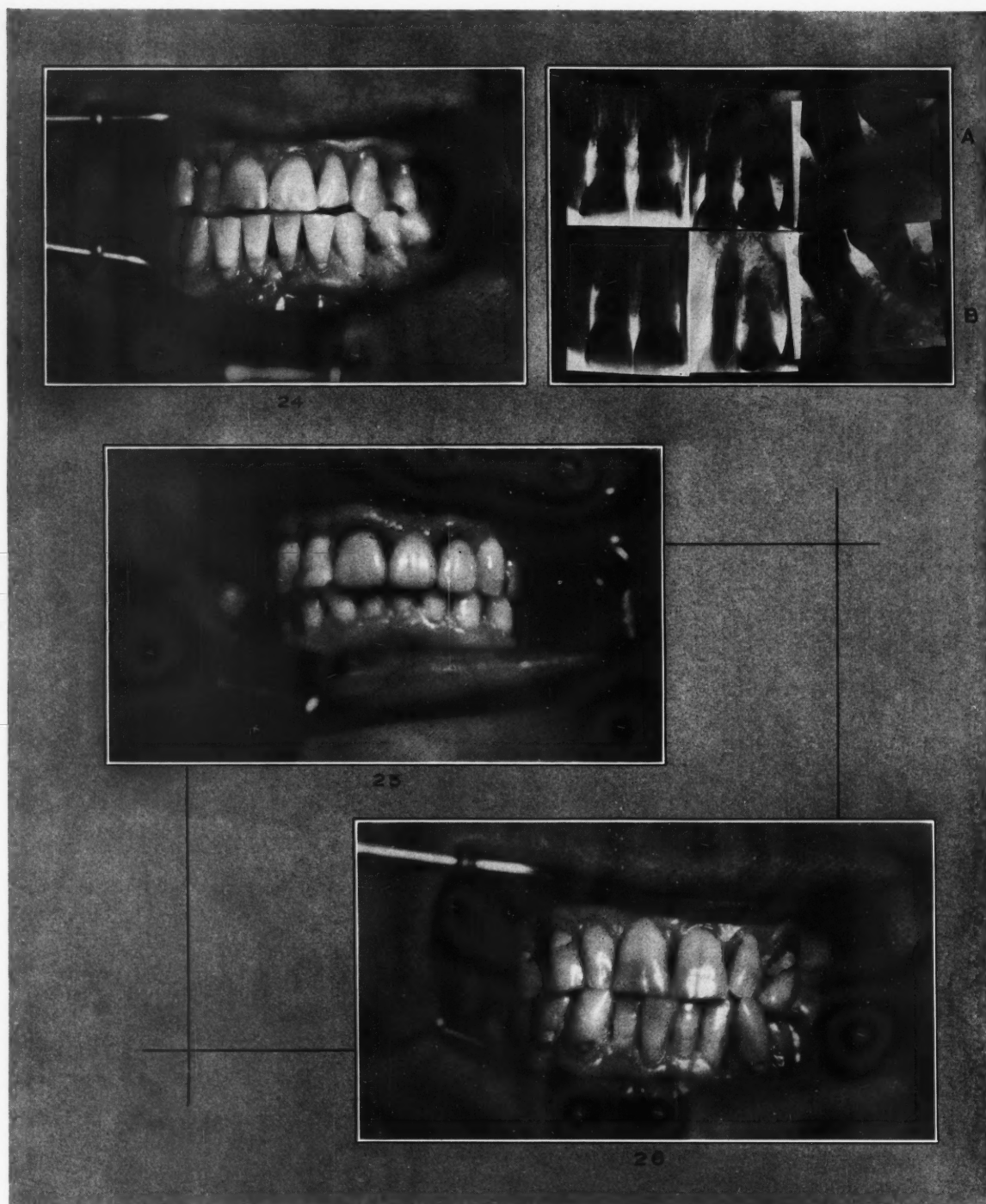


Fig. 24.—Appearance thirteen months after operation. Roentgenograms show (A), appearance before operation; (B), thirteen months after operation.

Fig. 25.—One year and six months after operation. The left central is a bridge pontic.

Fig. 26.—Appearance about two years after operation. During this period the teeth have had only home care.

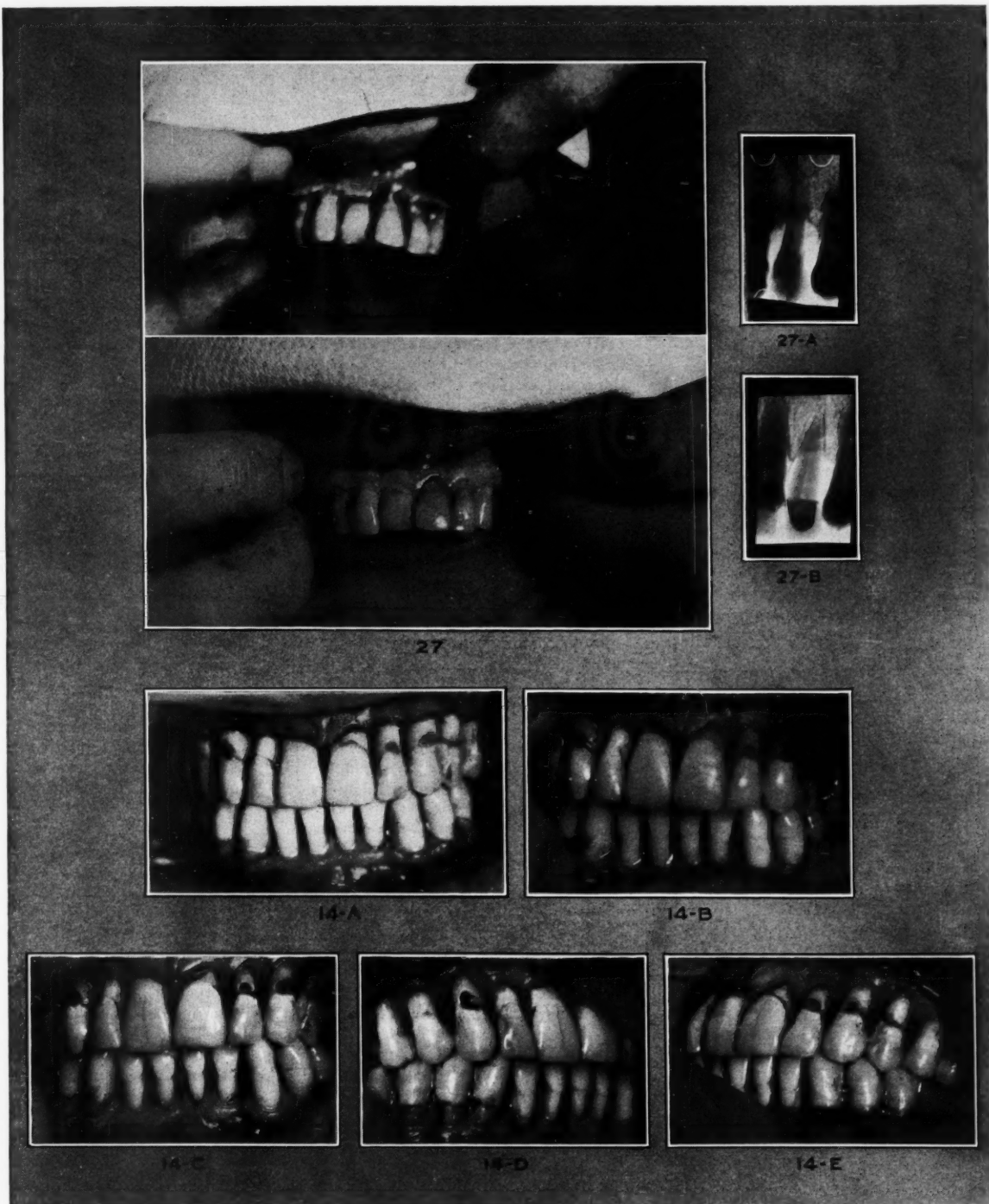


Fig. 27.—Upper, immediately after removal of pack. Note thick irregular gum margin. Lower, same case, thirteen months later. Roentgenograms show the bone repair in the worst pocket. (A), before operation; (B), thirteen months after operation.

Fig. 14 (A to E).—Postoperative results in case shown in colored photographs. (A), immediately after operation; (B), three weeks after operation; (C), (D), and (E), five weeks after operation.

A SIMPLIFIED AND INEXPENSIVE INLAY EXPANSION TECHNIQUE

ROBERT K. BAXTER, D.D.S.

Chicago

WHEN one reads the detailed expansion techniques advocated at the present time, one is confronted by the question: Must the dentist of necessity discard his entire present apparatus and invest a large sum of money in new devices to obtain good results in small castings? The answer is that such a procedure is not called for and that by the addition of a few inexpensive articles to his present apparatus the average dentist can vastly improve his results by application of the present up-to-date methods of wax and investment expansion.

These articles and their uses as applied to a technique wherein expansion is obtained by immersion in a heated water bath are described here. Their uses, however, are not limited to this technique but with very slight modification can be applied to any expansion technique now advocated.

APPARATUS

1. *Selection of Investment.*—An inlay investment should be selected which has a slow initial setting time of from fifteen to twenty minutes. By initial setting time is meant the period between the pouring of a small sample of the mixture onto a glass slab (Fig. 1) and the time when this sample will just begin to break in a clean fracture and not smear when rubbed lightly (Fig. 2). For this purpose I use Weinstein's Pyromold number 1, and all references to investment will be to this particular one although there are several others on the market which work equally well.

2. *Assemblage and arrangement of Articles.*—The articles required for the mixing, thickening and vibrating of the investment, the expansion and elimination of the wax, and the casting of the mold are next assembled and the apparatus arranged (Fig. 3). A camel's hair brush of medium size will be needed to use in dry-dusting the wax pattern and in applying a thickened mix of investment later to the pattern. An ordinary rubber mixing bowl and spatula for the investment will also be needed. A

In this article, Doctor Baxter has torn some of the shroud of mystery from the expansion subject. He shows how accurate castings may be produced without the use of expensive and elaborate equipment. In short, the subject of expansion comprises simply this:

Gold shrinks about 1.25 per cent when cast; therefore, compensation must be made for this shrinkage. How?

By "(1) Expansion of the wax pattern;

(2) Expansion of the investment;

Or (3) A combination of wax and investment expansion."

—Bureau of Standards Report

mechanical mixer is good to use but fine results can be obtained without it. Also, in connection with the proper mixing of the investment, one should be sure to have the proper proportions of investment powder and water. For this purpose is used a small glass graduate of about 25 cc. capacity (Fig. 4) in which the water is measured, and a small scale for weighing investment. If a small scale is not at hand a satisfactory one can be made by the use of one of the measuring devices (Fig. 4) furnished with certain kinds of investment if it is modified as follows:

Forty grams of dry investment should be placed in the large end and the opposite end filled with modeling compound until a balance is produced. This makes a permanent scale for use in weighing investment.

Another article needed when investment is to be applied to pattern is a small glass slab. One which measures one-fourth inch thick and is 3 inches wide by 6 inches long is a handy size.

To sum up then, the articles needed so far are: (1) A camel's hair brush; (2) rubber mixing bowl; (3) spatula; (4) mechanical mixer (optional); (5) glass graduate of 25 cc. capacity; (6) scale, and (7) small glass slab.

3. *Elimination of Air Bubbles.*—The elimination of air bubbles from the mixed investment, which is necessary whether the mixing is done by hand or by machine, is accomplished by another device for flowing a thickened portion of the initial mix onto the wax pattern; that is, a heavy vi-

brator (Fig. 5) made by cutting a flat side on an ordinary felt polishing wheel $1\frac{1}{2}$ inches in diameter and one-half inch thick. This is mounted on a lathe chuck. After the hand spatulation of the investment has proceeded for about thirty seconds, the base of the rubber bowl is rested on the rotating felt wheel with the flattened side (Fig. 6), and all imprisoned air bubbles are released by the vibrations produced. (A mechanical or electrical vibrator serves the same purpose but need not be purchased to obtain good results.) A similar vibrator is fitted to the opposite end of the laboratory lathe and is made by attaching a small hexagon-nut approximately one-half inch across the corners to a lathe chuck. This is used to cause a thickened portion of the investment to flow over the wax pattern when investing. Should the vibration prove to be heavier than desired it may be reduced any required amount by holding a file on the rotating hexagon-nut to remove the corners slightly.

4. *Inlay Rings, Bases, and Caps.*—Every dentist who casts inlays has inlay rings and bases but few have caps for the rings. By a cap I mean a cover (Fig. 7) which can be used to close the bottom of the inlay ring while it is immersed in the water bath. If one has no means of closing the end of the inlay ring, a simple device can be constructed from sheet lead, one-sixteenth inch thick. For a circular ring, a circular piece of lead one-half inch larger in diameter than the outside diameter of the ring may be cut. The lead disc is placed over the

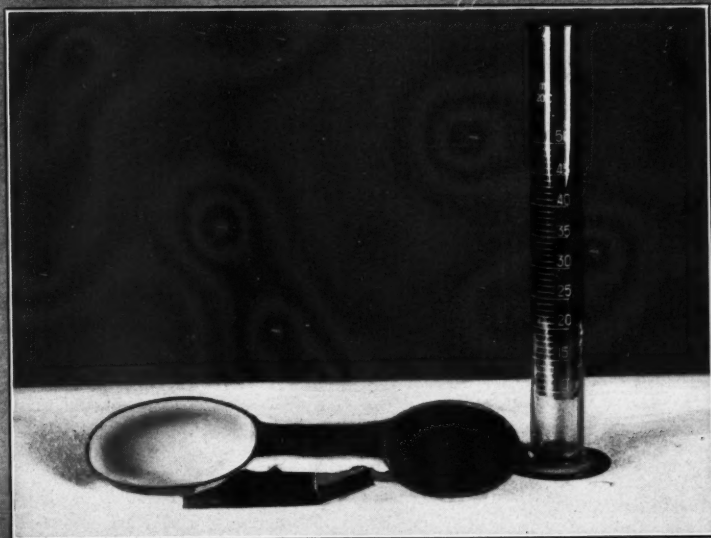
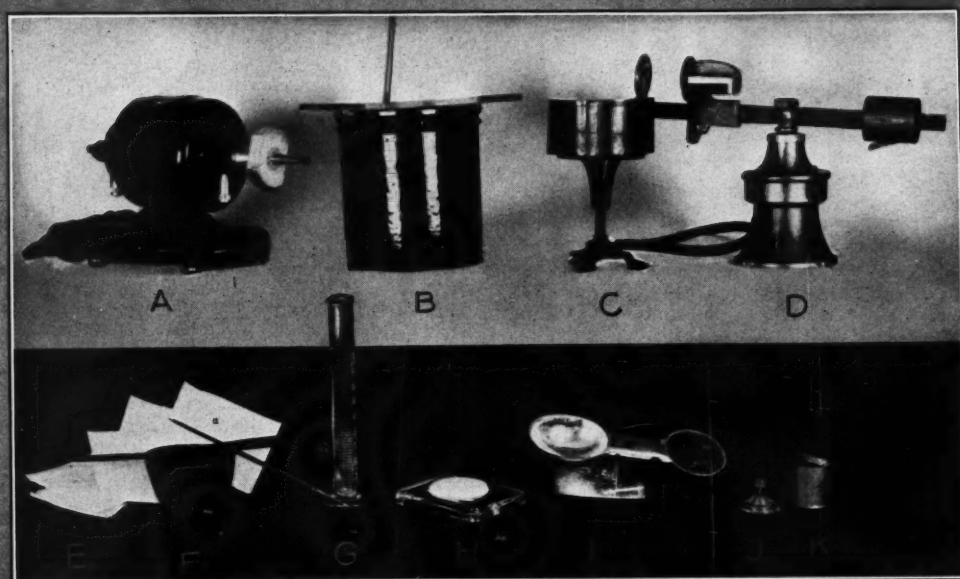
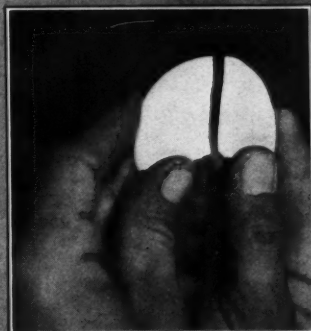
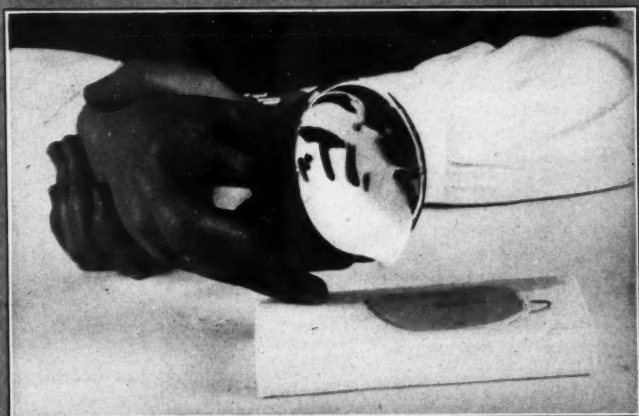


Fig. 1.—Pouring a sample to determine initial setting time.

Fig. 2.—A clean fracture of sample will result when the investment has set.

Fig. 3.—(A), laboratory motor with vibrators in place; (B), water bath complete; (C), wax eliminator; (D), good type casting machine; (E), investment weighed into envelopes; (F), plaster bowl, spatula and camel's hair brush; (G), glass graduate; (H), slab; (I), simple scale; (J), sprue former and base; (K), casting ring with cover.

Fig. 4.—Simple scale and graduate used to give similar proportions for every mix.

end of the ring so as to project evenly on all sides; the sides of the ring should be gently tapped and burnished over to form a moderately close-fitting cap. A square cap to fit square casting rings can be made just as simply by using a square of lead instead of a circular piece. (Nicely made rings, bases, and caps are on the market but are not necessary in obtaining good castings.)

5. *Water Baths*.—A water bath is merely a container holding a certain volume of water heated to a predetermined temperature. It is used to supply heat to the wax pattern contained in the poured up and covered ring. This heat expands the wax pattern up to a certain point during the time the investment is setting. The result is a slightly larger mold for the gold than the wax pattern which was removed from the mouth. The enlargement of the mold allows the gold to shrink back to the size of the original pattern and then produces a much closer fit than a casting made from an unexpanded wax pattern. Many forms of water bath, varying from the simple and inexpensive types to the complex and expensive ones, are on the market. If a water bath with a temperature control is had, so much the better; if not, this suggestion might be tried before one is bought:

In an earthenware jar of half-gallon capacity fitted with a cover of the same material is placed a flat-bottom tin can about half as high as the inside of the jar (Fig. 8). The bottom of the tin can is placed toward the top of the jar and the tin bottom is perforated with several nail holes. This makes a shelf on which to stand the invested inlay rings while they are undergoing expansion. A centigrade thermometer with readings at least up to 75 degrees should have the bulb end covered with a short piece of rubber tubing (Fig. 9) to prevent breakage. The thermometer is then made to stand in the water chamber of the bath.

6. *Wax Elimination*.—Here again are to be found a great variety of types of burners ranging from a simple gas burner on one hand to large thermostatically controlled electric ovens on the other hand. Any of them will give the desired results if properly used. Inasmuch as we are interested in an inexpensive method of elimination now, one of the simplest burners (Fig. 10) is considered here.

The burner consists of an ordinary vulcanite flask with removable cover placed on the spider of the laboratory Bunsen burner. Slow evaporation of the water in the investment is obtained by placing the invested ring,

sprue-hole up, on top the cover of this improvised oven with a small gas flame beneath it. The water is allowed to evaporate until the investment changes from a light green to white. Care must be taken not to boil out the wax. The ring is then placed inside the flask or oven and the cover replaced. The gas flame is turned up considerably higher and elimination of the wax takes place with the production of a white smoke and an accompanying discoloration of the investment from white to deep brown or almost black. When all the smoke has been driven off and no odor of burned wax can be had when the opening of the ring is placed near the nose, the mold is ready to cast immediately. It should not be allowed to cool.

TECHNIQUE

In the preparation of an inlay in which the technique depends almost entirely on the expansion of the wax pattern to offset the shrinkage of the gold and little on the expansion of the investment to aid the process, the following procedure is advised:

1. A plaster bowl, spatula, inlay ring, cover, and the small glass cement slab should be placed in the water-bath jar and hot tap water permitted to run into it until the jar is thoroughly warm and the thermometer registers 6°C. above the desired expansion temperature for the particular inlay pattern to be cast. These expansion temperatures for the Weinstein (number 1) investment range from 48°C. for small simple patterns to 53°C. for large complex patterns, such as three-fourth crowns or three or four surface inlays. Thus it will be seen that the water bath temperature at the onset will range from 54°C. to 59°C. according to the size and shape of the pattern.

2. The wax pattern is mounted securely to the sprue former, an old victrola needle or a right angle bur being ideal according to the size of the pattern, and then the sprue is mounted into the base securely and the pattern brought to a point about one-fourth inch from the tip of the sprue former. This accomplished, the entire pattern is dusted with the dry investment used on a camel's hair brush (Fig. 11). One should be sure to brush off all free investment powder. This produces a dull surface on wax and removes most of the oiliness produced by handling or by saliva.

3. Forty grams of Weinstein investment number 1 is placed in the warmed plaster bowl and 18 cc. of the hot water added from the water bath. Thorough spatulation will pro-

duce a rather thin creamy mixture. To eliminate the incorporated air bubbles, the base of the plaster bowl should be placed on the rotating felt-wheel vibrator attached to the laboratory lathe and vibrated for about fifteen seconds (Fig. 6).

The small glass slab from the water bath is then removed, dried, and on one side of it is placed about a teaspoonful of the mixed investment. Into this small portion enough dry investment should be mixed to thicken it to the consistency of a thin putty. The slab containing the thick mixture is then vibrated by holding it against the felt wheel vibrator to eliminate entirely the incorporated air bubbles (Fig. 12).

4. With the sprue base held in one hand, a piece of the thickened investment about the size of a large pea is placed on the sprue former between the base and the pattern (Fig. 13). The bottom surface of the sprue base is now placed in contact with the fine vibrator (brass nut) and the thick investment caused to creep slowly all over the wax pattern (Fig. 14). Small portions of the thick investment are added and the vibration repeated until the entire pattern and sprue former are covered to a depth of about one-eighth inch on all sides (Fig. 15).

When this is completed the inlay ring is removed from the water bath and placed over the invested pattern. Then from the plaster bowl the thinner investment is poured to fill the ring (Fig. 16). The cover is placed on the ring and immersed in the water bath for about twenty minutes, or until the investment is set. One should be sure to have the cover on the jar containing the hot water.

5. After the investment is set, the cover, sprue base and sprue former are removed, and the ring is placed on top of the wax eliminator (with the sprue-hole up) at low heat so that the water within the investment may be slowly driven off. It may be well to mention that at no time is the wax allowed to boil. Application of a low heat for about three quarters of an hour is usually enough, and at this time the ring is placed within the furnace and the heat is increased so that the wax will be driven off. The elimination of the wax at the proper temperature requires from one-quarter to one-half hour and is accompanied by the formation of white smoke and the discoloration of the investment. When the smoke has entirely ceased to form, the mold is ready to cast with the particular gold desired. It should be cast with as little delay as possible.

One precaution to be observed in

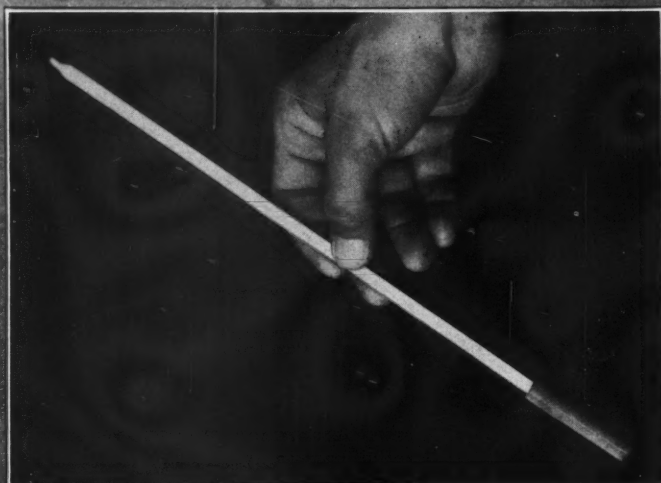


Fig. 5.—Felt wheel or heavy vibrator and brass nut or light vibrator on tapered chuck.

Fig. 6.—Vibrating bowl containing investment to eliminate air bubbles incorporated during spatulation.

Fig. 7.—Sheet lead cover for ring.

Fig. 8.—(A), metal can to be placed inside porcelain jar to act as shelf; (B), porcelain jar with cover and thermometer.



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Fig. 9.—Method of protecting thermometer end with rubber tube.

Fig. 10.—Vulcanite flask on a Bunsen burner makes a simple and efficient eliminator furnace.

Fig. 11.—Dusting pattern with dry investment powder prior to investing.

casting is the proper heating of the gold. The metal melted to a degree at which it will just flow freely is ideal, while heating to a watery consistency and an almost white heat is not to be thought of, as this produces rough castings which are hard to clean up and gives far from desirable results.

TYPES OF CASTING MACHINES

In regard to types of casting machines much might be said. Every type of method, from the ancient wad of wet paper in a tin cup to the machines that produce pressure on one side and vacuum on the other, has its advocates. In my experience I have come to favor the spring-operating, centrifugal force type in which the gold is melted in a clay crucible away from the investment and its degree of fluidity can easily be deter-

mined during heating by shaking the rotating arm. Other machines in the hands of their advocates produce ideal results. Perhaps, therefore, it will be as well to leave the casting machine selection up to the individual who will use it.

6. After the mold has been cast it is allowed to stand until cool and the casting is removed from the investment, scrubbed off and pickled by heating to a dull red and dropping into acid.

CONCLUSION

The production of an accurately fitting gold casting is not a trick; nor is it due to the magic properties of any one kind of investment, water bath, wax eliminator, or casting machine as so many would lead us to believe; but rather it is the studious

application, time after time, of a set of simple requirements until the operator has learned that short cuts or substitutions of parts of other techniques into his own will usually produce failure. When one has selected the technique he wishes to follow, he should adhere to it with religious observance of the details, and after a few trials he will find success.

I have in no way intended to convey the thought that highly developed machines and apparatus for the accomplishment of the expansion method of inlay production are out of place, but rather I have tried to introduce a first step in the production of better-fitting gold castings by suggesting that the pieces of apparatus described here be added to the dentist's outfit.

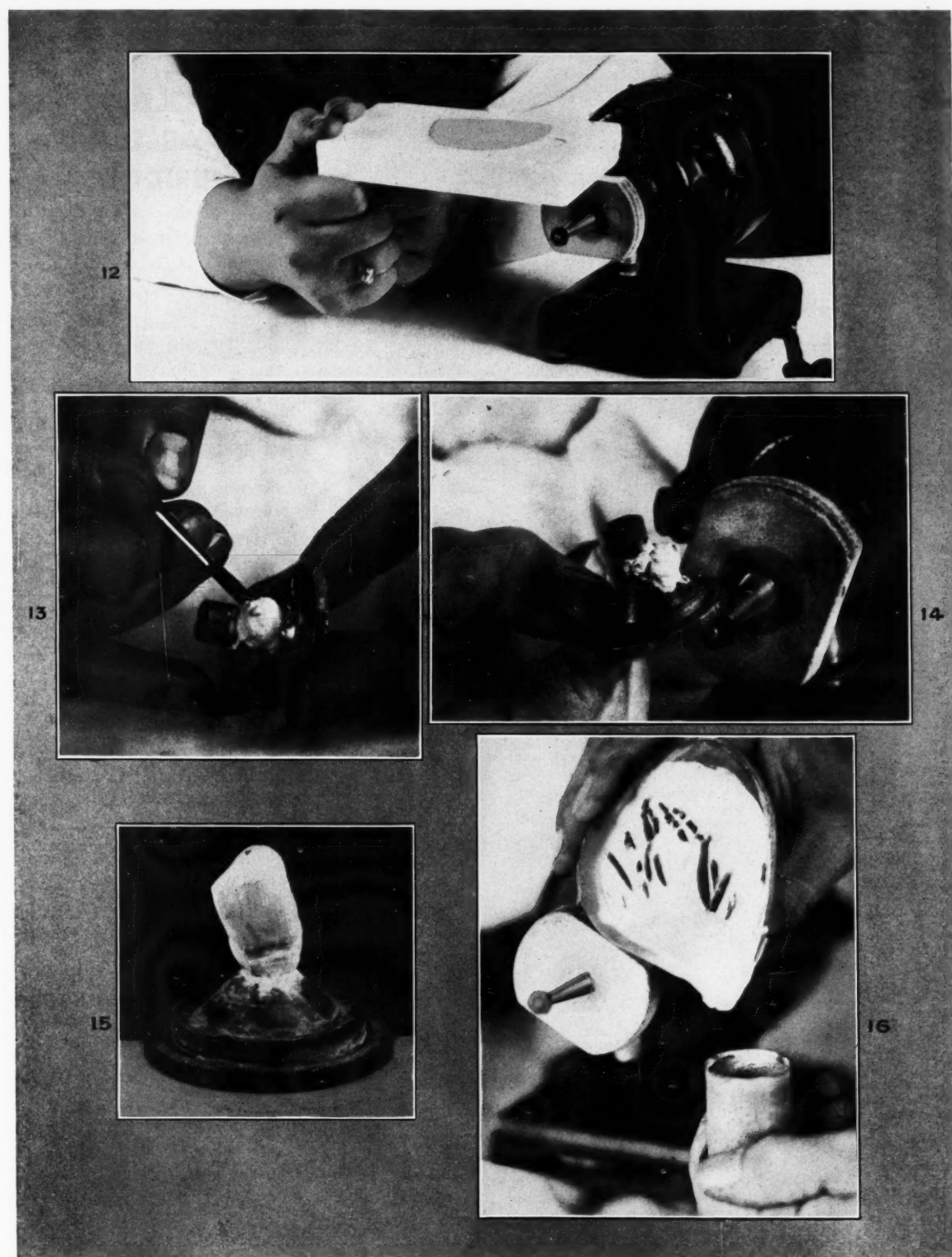


Fig. 12.—Vibrating thickened mix to eliminate air bubbles.

Fig. 13.—Thickened mix being applied to base of pattern.

Fig. 14.—Vibrating base against brass nut to flow thick mix over pattern.

Fig. 15.—Wax pattern entirely covered with thick mix of investment.

Fig. 16.—Bowl containing mix being held in contact with vibrator to cause investment to flow into ring.

THE SOLDERLESS MOVABLE FIXED BRIDGE

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Brooklyn

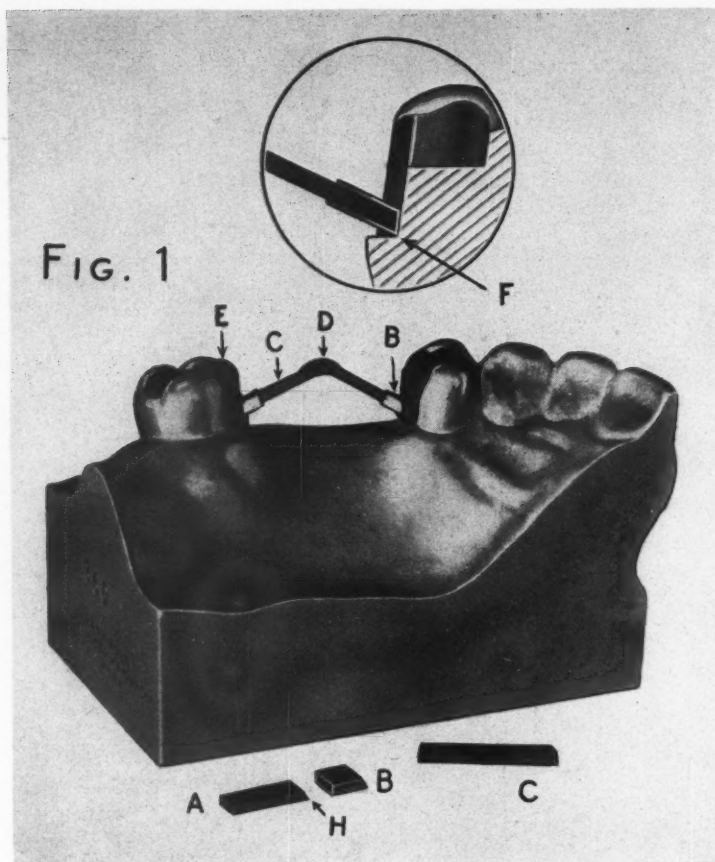


Fig. 1.—Fixed movable attachment. A, male part; B, female sheath; C, carbon stick; D, drop of sticky wax joining the carbon sticks; E, wax patterns; F, beveled end of sheath placed into cervical part of wax pattern parallel with approximal wall of cavity.

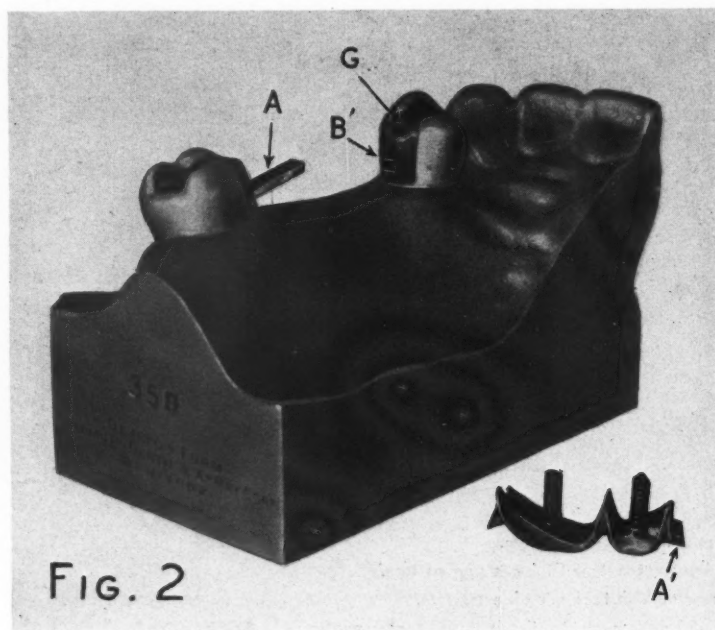


Fig. 2.—A, male parts fitted to sheaths in inlays; A', part of male revealed after inlays and pontics have been lifted off model; G and B', inlays containing sheaths.

THE association of soldering with the fixed bridge is so generally accepted as a technical fact that the title of this paper may appear paradoxical. Yet it is possible to construct a successful bridge without the use of solder. There are several disadvantages to soldering the point of an abutment and a pontic, namely:

1. The direct flame, used to make the solder flow, may cause warping or burning of the cervical margins of inlays or other abutment units.

2. The heat of the soldering flame may cause contraction by a change in the base metal of the abutment and thus close tooth adaptation is lost.

3. The investment used in soldering is subjected to some change under heat.

4. When the soldered case is finished it is difficult to determine the fit of the cervical margin of the abutment because of the fixed presence of an adjoining pontic.

5. Individual approximal contour of the pontic and the abutment, as well as the interproximal space between them, is obliterated.

6. The joint is a rigidly fixed one. The presence of solder from occlusal to gingival rigidly engages the abutment teeth occlusally or at a distance from the tooth apex. Thus a lever of the second class is produced which, under the natural stress of mastication, exerts a powerful leverage upon the abutment teeth.

7. The rigidly fixed bridge made by soldering necessitates greater anchorage to the abutment teeth to prevent loosening of one or both of the

abutment units; that is, it is necessary to cut more tooth structure to gain retention in the soldered type than in the solderless movable fixed bridge. This conservation of dental hard tissues is an important consideration.

TECHNIQUE

Replacing a Missing Upper Right Second Bicuspid and First Molar.—Compound cavities are prepared in the first bicuspid and second molars as shown in Fig. 3. From copper band impressions amalgam dies are formed and wax patterns carved.

Mode of Attachment.—The attachment, known as the Freedman fixed movable attachment, consists of two parts of iridio-platinum, a male part, A in Fig. 1, and a female sheath, B as shown in Fig. 1. The male part is already beveled at one end (H) with a corresponding bevel in the sheath. First the sheath, which is held by attaching the male part thereto, is warmed and placed into the cervical part of the wax pattern so the beveled end is parallel with the approximal wall of the cavity, as shown by F in Fig. 1. The male part is replaced by the carbon stick C. The model in Fig. 1 shows the sheaths in position in the wax patterns E. D is a drop of sticky wax joining the carbon sticks.

The inlays are cast onto the sheaths, which they easily engage. The inlays containing the sheaths (G B' in Fig. 2) are trimmed and not tampered with or exposed to heat for the remainder of the operation. With the inlays fitted in the mouth, a bite and impression are taken. The case is mounted on the articulator. The male parts are fitted to the sheaths in the inlays (A in Fig. 2), the protruding part of A being shortened to permit fitting of the pontics.

Pontics.—Since hygiene is a primary consideration, the porcelain-tipped tooth, as the Steele's Trupontic, may be used. English Tube teeth boxed with the sanitary slope are also favorably used, resulting in a minimum gold contact with the tissues. The Trubridge porcelain teeth have been used in the illustration. In the foreground of Fig. 2 can be seen what the wax framework, which embodies the free end of the male parts, looks like. A' is the part of the male which is revealed after the inlays, together with the pontics, have been lifted off the model, followed by teasing the inlays off, laterally. The framework is cast, engaging the male parts.

Fig. 3 shows the horizontal manner in which the three segments are assembled. The inclination of the attachments to prevent drifting of the

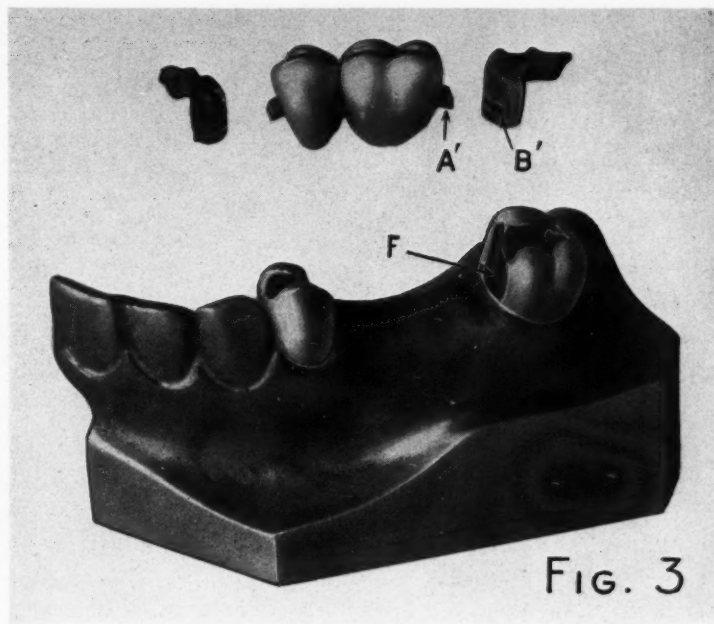


Fig. 3.—Horizontal manner in which three segments are assembled.

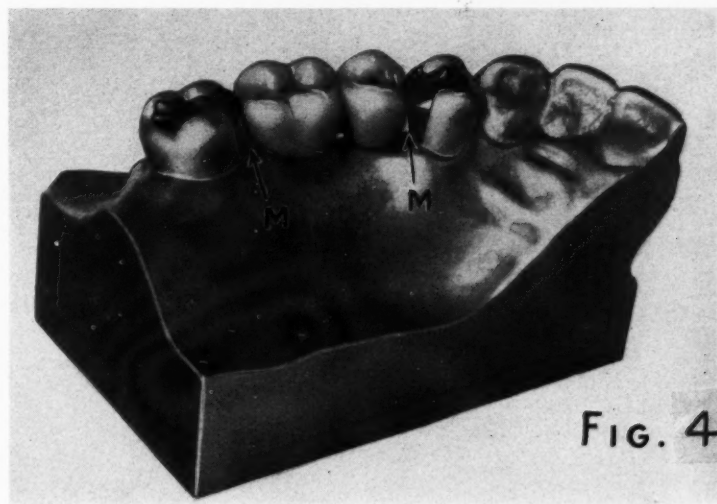


Fig. 4.—Bridge in position. M denotes high interproximal embrasures.

abutment teeth should be noted. The male parts which protrude from the pontic frame are inserted into their respective sheaths in the inlays. This joins the three segments into one. A thin mix of cement is applied to the inlays and the bridge is cemented into place similar to the way in which all other types of fixed bridges are cemented.

Fig. 4 shows the bridge in position. M denotes the high interproximal embrasures which provide ample cleansing facilities to brush, with the occasional use of silk floss.

It should be noted that, instead of the rigidly soldered joint, a catenation of artificial to natural teeth obtains. Not only is there individual motion of abutments and pontics, but also a great reduction of lateral stress upon the abutment teeth. Because the attachment is disposed cervically, which is a point in the natural tooth nearer the alveolus, the tritulative stress of mastication is delivered to the neck or "trunk" of the tooth, so to speak. Leverage can more easily be tolerated at that point than at the occlusal point of the tooth.

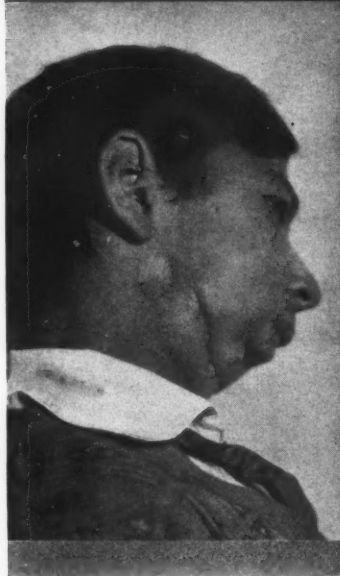


Fig. 1 (Case 1).—Front view of patient eight years after treatment for simple osteomyelitis of mandible.

Fig. 2 (Case 1).—Profile view.

Fig. 3 (Case 1).—Undeveloped mandible.

Fig. 4 (Case 2).—Left side. Extensive osteomyelitic destruction of body of mandible, ramus, condyloid and coronoid processes.



OSTEOMYELITIS OF THE MANDIBLE

RADICAL VERSUS CONSERVATIVE TREATMENT

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and

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Chicago

BLAIR,¹ in his paper on osteomyelitis of the jaws, makes the following statement: "Much more disastrous than the removal of tooth buds is the complete lack of regeneration that may follow the too early removal of the dead bone or the attempt to control infection by resecting the original live bone. There never has come under our notice a single instance of failure of regeneration of the mandible following a simple osteomyelitis that had not been subject to early energetic bone surgery." The two cases reported here bear out the truth of this observation. The first, taken from a hospital record, is one in which repeated curettements of the bone had been resorted to, and the other, our case, in which conservatism was practiced.

REPORT OF CASES

Case 1.—A boy, aged six years, admitted to the hospital March 28, 1919, showed swelling and tenderness about the right side of the mandible, with several small sinuses, communicating with the bones, discharging a thin pus. There was also a swelling and fluctuation over the lower one-third portion of the left femur, but there was neither limitation of motion of the knee nor apparent joint involvement.

Operation.—April 2, 1919, the femur was curetted and packed with iodoform gauze. Incisions were made through the sinuses in the jaw. Removal of the sequestra and curettement of the cavity were carried out, and iodoform gauze and a drain were inserted.

May 14, 1919, the former cavity in the jaw contained a little necrotic bone and a large amount of granulation tissue. The incision was enlarged at both ends, the bone cavity curetted, and one tooth removed.

May 21, 1919, the existing sinuses in the jaw were enlarged and all granulation tissue and necrotic bone were curetted out with a spoon curet.

June 25, 1919, an incision was

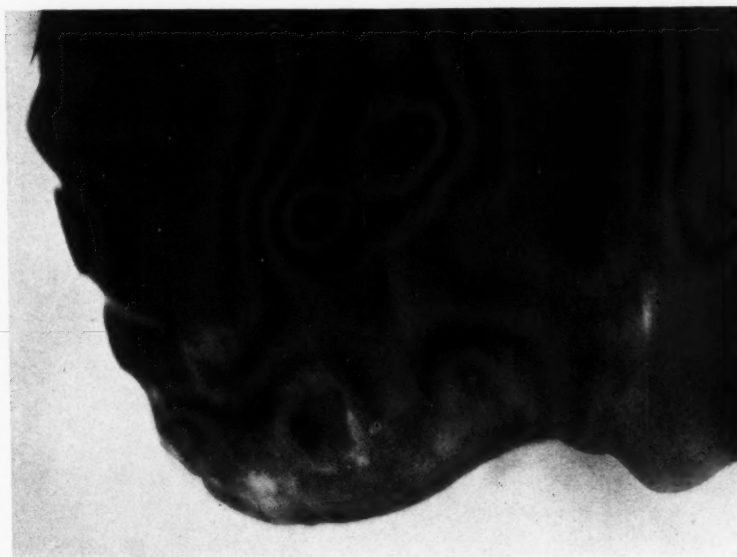


Fig. 5 (Case 2).—Right side. Osteomyelitic destruction extending to right involving body and ramus of mandible.



Fig. 6 (Case 2).—Right side. Upper two-thirds of the mandible sequestering with right first and second molars in situ. Lower portion of body of mandible is intact.

¹Blair, V.P.: Septic Osteomyelitis of the Bones of the Skull and Face, *Ann. Surg.*, 1927.

made backward along the ramus of the jaw on the right side. The periosteum was elevated and necrotic bone and granulation tissue were removed. One molar tooth was removed with granulation tissue. The area of the jaw was scraped clean.

July 25, 1919, an incision was made forward over the right angle of the mandible, disclosing an overgrowth of cancellous bone. Necrotic bone was removed and the angle of the bone scraped clean. Another incision was made backward from the left sinus about one inch along the ramus of the jaw. The bone was scraped and granulation tissue and necrotic bone were removed.

This case came to our attention eight years after the surgical treatment just described had been instituted. Figures 1, 2 and 3 show the end-result of this energetic surgery.

Case 2.—A girl, aged eight years, was presented June 21, 1929, for consultation and advice.

History.—The patient was taken sick with measles on January 23, 1929. This was followed by an attack of whooping cough on February 1, and the patient was quarantined until March 3. May 22, she complained of a toothache in a lower second deciduous molar. The following morning the face was badly swollen. A jaw abscess developed which was incised externally at the angle of the mandible two weeks previous to the time the patient was presented to us for further treatment.

The roentgenograms at this time (figures 4 and 5), June 21, revealed an extensive osteomyelitis of the mandible involving the left ramus, condyloid, and coronoid processes, and extending to and involving the right ramus.

The patient was immediately hospitalized and on June 26, an operation was performed. An intra-oral incision was made extending from the molar region on the right side up to and including the anterior border of the ramus on the left side. All detached sequestra, including the left condyle, were removed. An attempt was made to retain as many teeth as possible and only those which were hopelessly loosened were removed at this time. The drainage wound was packed with iodoform gauze. The patient remained in the hospital for four days. She was sent home to the care of her dentist for daily irrigations. The mother was instructed to return with the child once a week for observation as they lived out of the city. Because of the loss of the left condyle, the child was encouraged to keep up motion of the mandible.



Fig. 7 (Case 2).—Left side. Sequestrum of upper portion of the mandible in situ. Appears locked in ramus. Lower portion of mandible has apparently increased in density.



Fig. 8 (Case 2).—Left side. Sequestered upper portion of mandible has been removed. Body of mandible has increased in density. New condyle has been formed. Although not of normal form, functions satisfactorily.

Later roentgenograms revealed the formation of a new functioning joint.

Slowly the entire upper two thirds of the mandible carrying the teeth began to sequestrate. The teeth were exfoliated one by one. Because of the

extensive destruction, which endangered the integrity of the mandible, it was deemed advisable to leave the sequestered portion in position.

August 10, 1929, a roentgenogram revealed this large sequestrum extend-

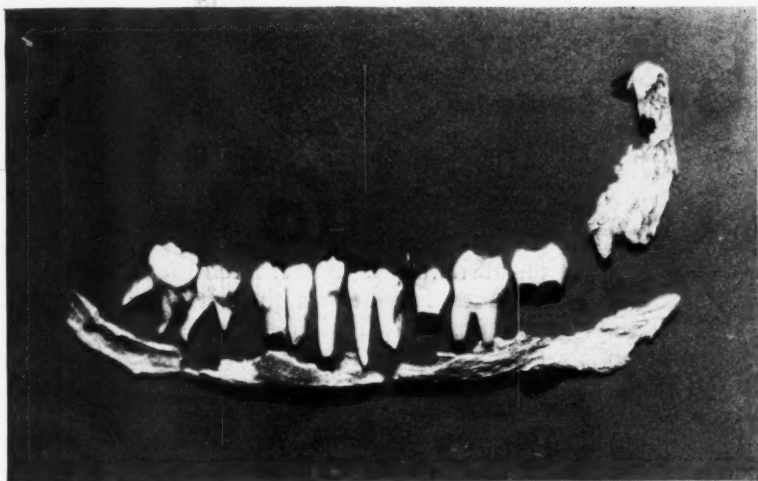


Fig. 9 (Case 2).—Part of sequestered mandible with teeth which were lost because of lack of support and blood supply.



Fig. 11 (Case 2).—Appearance of child before lower denture was inserted.



Fig. 10 (Case 2).—Lower right first and second molars intact. First molar kept to help support a denture.



Fig. 12 (Case 2).—Final appearance of patient with denture in place.

ing from ramus to ramus in situ with a very thin lower border of the mandible. The mother was instructed to keep up daily irrigations. The child was apparently in good health (Fig. 6).

Roentgenograms taken October 5, 1929, showed a marked condensation of the lower one half of the mandible with the sequestrum still in place (Fig. 7).

December 14, six months after the onset, the sequestered upper portion

of the mandible had become loosened and was lifted out of its bed.

January 4, 1930, a roentgenogram revealed a newly formed condyle on the left side with a marked condensation of what was left of the body of the mandible (Fig. 8).

Figure 9 shows sequestra, including left condyle, which had been removed, and the exfoliated teeth.

Figure 10, from a roentgenogram taken March 8, 1930, shows the right side of the mandible with the first

molar in place and an unerupted second molar. No other teeth remained in the lower jaw.

Because of the disfiguring effect of this loss, it was considered advisable to insert a lower denture. Figures 11 and 12 show the appearance of the patient before and after insertion of a lower denture.

A comparison of the two cases discussed here with their final end-results leaves no doubt as to the advisability of instituting conservative surgery instead of repeated curettements.

The Editor's Page

IN this, the first issue of the new DENTAL DIGEST, it may be well for the editor to tell the readers what they may expect as the editorial policy of this dental journal. But before passing on, we must pay a tribute to the former editors and publishers who spent their efforts and their abilities in the advancement of dentistry. They have made their contributions to the science and the art of dentistry. They have been successful. We hope to carry on.

It is our ambition to present the case of technical and scientific dentistry as clearly as possible, as simply as we can, and as accurately as we know how. We wish to be modern in the best sense: terse, quick, factual, scientific. The tendency in modern literature and journalism toward compression and realism and away from incoherent ramblings and sentimentalisms, we hope to carry to dental editing. The crush and bustle of modern living drains our energies and devours our time. The Victorians with their leisure and an economic life in slower tempo could afford the time for slow-moving, bulky literature, but we moderns cannot. We ask for facts unadorned; we demand the practical. We are scientists and pragmatists.

In the presentation of scientific and technical dental subjects, we hope to direct our efforts and make our appeal to the general practitioner in dentistry. It is our wish to supply him with definite information that he can translate into practical terms. Because the general practitioner is the backbone of dental practice (Committee on the Study of Dental Practice: General practitioners, 89 per cent; partial specialists, 8 per cent; complete specialists, 3 per cent) we will strive to supply him with facts, clearly and compactly presented, that will show him how to improve his technique and skill. Wherever possible we will use the visual method of presentation—charts, graphs, drawings, photographs.

We will be guilty of no compromise with science or the scientific method. We will have short patience with the spectacular, the bizarre, the emotional. Contributors are asked to supply us with factual information and not with personal viewpoints. Only that which is proved or can be proved by the

scientific method will receive our attention. To that end we do not propose to publish unsubstantial essays on scientific or technical subjects. High-flown theories and unproved statements are not in our field of interest.

If THE DENTAL DIGEST must at any time put on the armor of the crusader, it will not be to engage in sectional feuds or petty controversies; neither to further the political ambitions of any person or any group. For the most part this journal will be concerned with the professional phases of dental practice. We would like to believe that we might devote ourselves exclusively to the task of presenting the science and art of dentistry.

Dentistry has its enemies and traducers. Some are outside the profession; some are within. Among the external enemies we find a few smart-alec journalists who would degrade the profession; men who prey upon the dentist's pocketbook and time; and a group of business men and politicians who would put the practice of dentistry under corporate or state control. The enemies in our own household are many: some are suggesting radical changes in the dental educational program; others wish to break down the personal relationship between the dentist and patient, and put the practice of dentistry on a standardized mass-production basis; still others would introduce the technique of merchandising into the field of professional service and make dentistry a Simon-pure business. It is the function of virile journalism to lead the attack against the forces that would destroy dentistry. We expect to do our part.

So, then, this is what the readers may expect from the new DENTAL DIGEST: a magazine of dental science and technology, edited with the needs of the general practitioner in mind, which will cover all phases of clinical dental practice. The editorial requirements stress the importance of compression of text and the generous use of illustrations. Contributors are asked to apply this test to their material: Does this presentation disclose information that the average dentist may use to advantage?

It is our earnest desire that the new DENTAL DIGEST will make a worthwhile contribution to the profession of dentistry.

DENTISTRY IN SOVIET RUSSIA

An Interview with PETER T. SWANISH, Ph.D.
Chicago

What are the fundamental problems of health insurance in Soviet Russia today?

THERE are today in Soviet Russia four ground-floor problems of health insurance. The first is the immediate adoption of "sanitary minimums" by cooperative stores, communal kitchens, communal bakeries, and workers as a mass. A new campaign for personal hygiene and cleanliness is sweeping the U. S. S. R. (Union of Soviet Socialist Republics.) Stalin in an address to cooperatives recently denounced managers of cooperative shops and factories for their failure to deal with "dirt." Russia grew up in bilgewater and filth and almost came to like it. The masses became inured to it and would go on in their old jog-trot way except for Stalin who recently fixed the aim of his rhetorical machine gun on those who declared that because conditions were better now than in czarist days, there was no cause for complaint. "Only rotten and thoroughly tainted persons can comfort themselves by comparisons with the past." Soap, water, a will to clean, a gradual process of education, together

with a lot of propaganda, are all that are necessary. The Russians are certainly getting the propaganda. To make this propaganda effective, "communist brigades" have been organized to compel cooperative and state food shops, factory kitchens, workers to clean up. When the Soviet press or official spokesmen of the government talk about the cultural backwardness of the people, they are talking mainly in terms of personal cleanliness. The road to education in this direction is still long and winding.

A reduction of time lost on account of illness of workmen comes next in the problems of health insurance. To reduce the costs of workers' illness to the State is to raise the productive efficiency of the laboring masses. To reduce "lost time" to an absolute minimum is another way of augmenting the labor resources at the disposal of the State. The loss in production on account of illness in Leningrad alone was estimated at 117 million rubles in 1929, or 25 per cent of the annual increase in industrial output. The loss to the Union as a whole in the years 1928-1931 approximates from two and a half to three billion

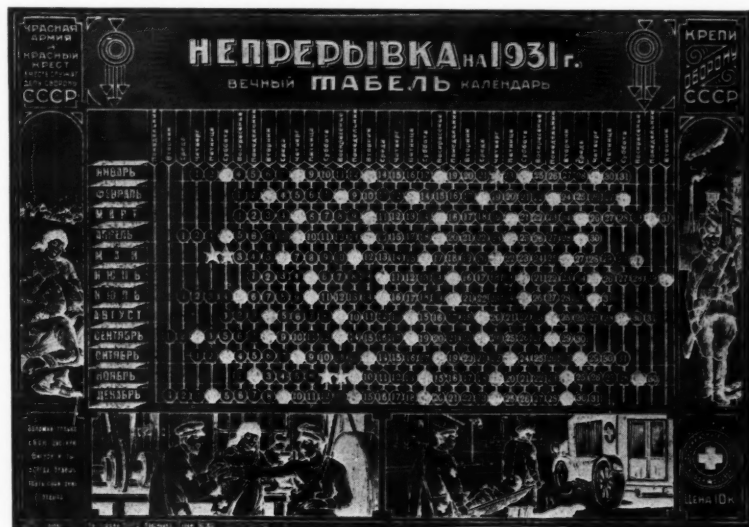


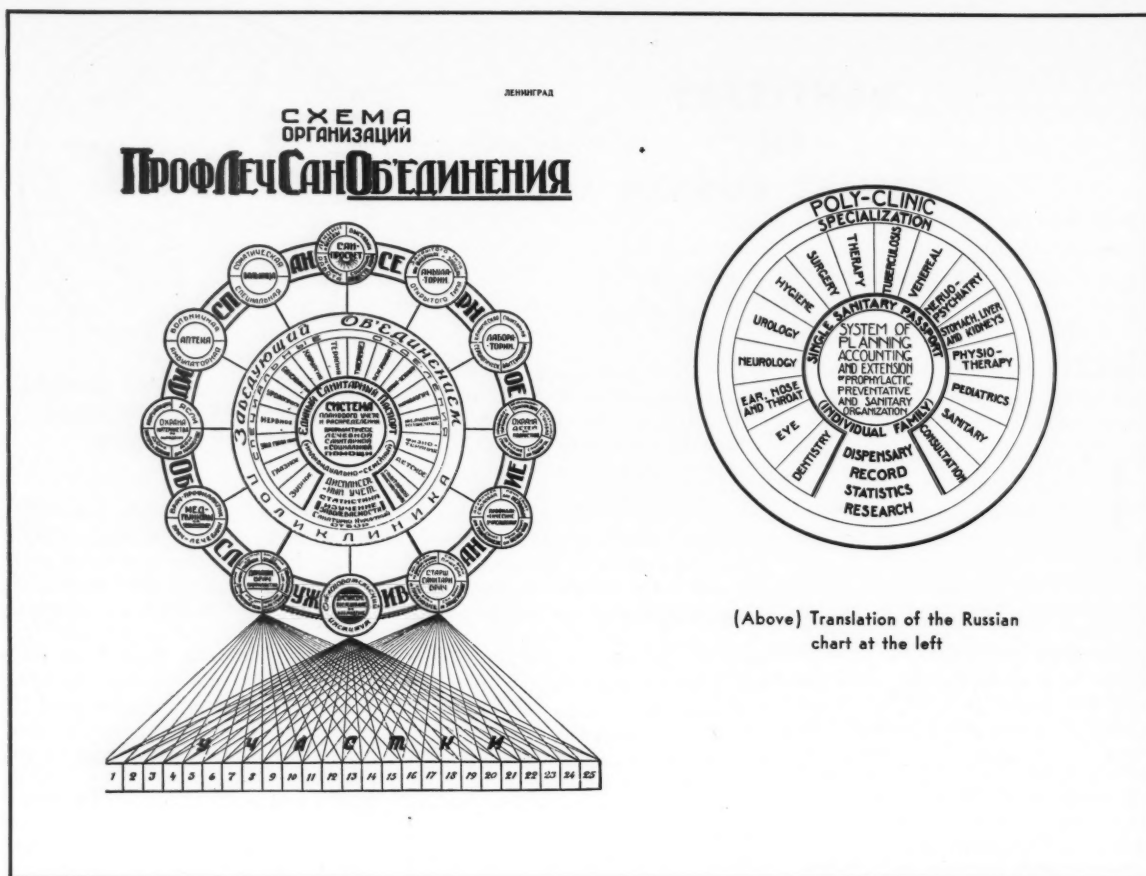
WHAT THE RUSSIAN DENTAL STUDENT SEES THROUGH HIS MICROSCOPE

rubles. The loss cannot be measured in arithmetical coefficients alone. Losses due to disorganization of production plans, especially during a period of rapid technologic changes, should be considered in any estimate of total loss to the State from this cause. The transformation of the Soviet Union from an agricultural to an industrial economy intensifies the importance of health insurance as an element in the cultural revolution within and as an all-Union economic factor.

The organization of "medical brigades" in collectivized agricultural regions constitutes the third current problem of health insurance in Soviet Russia. Medical and dental treatment of agricultural classes is a component part of the politico-economic policy of the State. The rapid transition from individual to collective agricultural production since 1929 calls for a root reorganization of rural medicine. The new organization must provide competent physicians and dentists to care for agricultural laborers on state farms and peasants on collective farms. The nucleus of this new *Sovchoz-Collective* medicine is the "medical brigade." In the last sowing campaign 159 brigades, composed of 960 physicians and dentists, and 568 nurses and dental assistants, went into the rural districts. During the

The Uninterrupted Calendar means that industry operates 360 instead of 280 or 300 days annually. The worker labors four days and rests the fifth, according to the color designating his rest day. Together with the Red Holidays, May 1 and 2, International Days; November 7 and 8 Days of the Proletarian Revolution; and January 22, Lenin's day, as well as the annual vacation, the worker rests 72 days annually. The number of hours worked annually is 1953, or 13 hours less than before the change. In the lower left hand corner of the calendar is a warning to the worker to remember his color.





harvest campaign 195 brigades—738 physicians and dentists, and 463 assistants—treated patients throughout the agricultural area of the Union. In addition to treatment, these brigades took an active part in the dissemination of health (incidentally, political propaganda as well) education—lectures, demonstrations, and pictorial literature.

The extension of maternity and care of children forms the fourth of the current tasks of health insurance in Soviet Russia. The industrialization of the country creates a demand for new cadres of workers. Each year an increasing proportion of women will take their place in industry. The People's Commissariat of Labor in its memorandum on "Women and the Five-Year Plan," notes a significant increase in the number of women in heavy industry. In the manufacture of agricultural machinery the ratio of women jumped from 4.8 per cent in 1928-1929 to 14.2 per cent in 1930-1931; in electrical machinery and equipment from 18.8 to 34.5 per cent; in miscellaneous industries from 8.7 to 19.7 per cent. The Five-Year Plan contemplates the enlistment of 4,000,000

additional women in the ranks of workers as compared with 1928-1929. "A socialistic state," wrote Lenin, "is only possible when millions instead of hundreds of women participate in its construction." To organize the life of millions of women; to provide medical treatment that they may take their place in industry in increasing numbers and so assist in the upbuilding of a socialist economy—this is the sap of the problem before the agencies of health insurance in regard to women.

It becomes apparent that the functions of the agencies of health insurance are a part of the politico-economic activity of the Soviet government. The essential substance of Soviet policy consists (1) in the mobilization of class consciousness and revolutionary activity against capitalistic elements within the country; (2) the organization of the creative initiative of workers against bureaucratization of Soviet institutions; (3) against opportunism in the party, and (4) in raising the productive efficiency of the workers and so hasten the transition from state capitalism to the realization of a socialist state.

What phase of medicine and dentistry receives most emphasis in Soviet Russia today?

The essential purpose of the new organization of social medicine, Prophylaxis-Treatment-Sanitation combined for administrative purposes into a single organization, is to prevent disease; to devise far-reaching prophylactic means for masses of workers in place of individual treatment. Every phase of medical, surgical, dental, and sanitary activity is embraced within the Proph-Tre-San organization polyclinics, ambulatories, all institutions for maternal and child welfare and care, sanitary organizations (educational, venereal, and tuberculosis clinics, bacteriologic and chemical laboratories, pharmacies, and dietary kitchens and laboratories), sanatoriums and hospitals. The position of dentistry (stomatology) is indicated in the accompanying graphic picture. It is on a plane of equal importance with other branches of medicine. The dental branch is organized on the stomatologic basis. These stomatologic institutes give every kind of dental treatment—from the cleaning of teeth

to the most complicated dental surgical operation. Specialists of the stomatologic institutes examine hospital patients for oral sepsis. Such histories of cases are part of the research work carried on by the institutes.

What is the status of the private dentist in Soviet Russia?

The status of the private practitioner is extremely precarious. Medicine is now a state business and the private dentist will soon go the way of private trade; that is, disappear altogether. The State controls the manufacture, purchase, and sale of dental materials. The needs of the stomatologic institutes are first satisfied. If there is anything left, the private dentist may purchase supplies from State shops at exorbitant prices. Not infrequently he goes without any supplies, especially last summer was this so when there was a general shortage of all medicines. Further, the private practitioner, because of the dearth of housing space and the consequent necessity of squeezing as many people as possible into the available space, finds it as difficult to maintain a reasonably sanitary office for practice as it is to weave a rope out of sand. If he wants additional space he must get a special card of permission from the District Division of the Health Insurance Organs; but because of the condition of housing and the legal requirement that workers suffering from specified diseases have a prior right to additional space beyond the norm of nine square meters per person, this provision in the law, so far as the private dentist is concerned, has no practical meaning. The private practitioner is in the lower categories (categories are based on social status) and it is just about impossible for him to buy elementary necessities, such as food, soap, and shoes and clothing. Besides all these disabilities, he is singled out as a special class for burdensome housing and income taxes.

What about dentists employed by the State?

Dentists employed by the State have the status of *Sloozhaschiye* (servants of the State) and are in the second category for purposes of class differentiation. Workers are in the first category. For practical purposes this means that persons in the first category can buy more calories; for instance, 800 grams of bread and 600 grams of meat daily; those in the second, 800 grams of bread and 400 grams of meat (when available in the shops). All scientists are entitled to housing space in addition to the

legal norm up to 18 square meters since August 1, 1930. This is designed to accommodate their libraries and laboratories and is paid for at the ordinary rate. The cost of housing space varies with compensation received. On an average, it amounts to 6 or 8 per cent of the monthly wage.

The salaries of dentists in stomatologic institutes vary from 165 rubles monthly for prosthetic work to 225 rubles paid to the director of the laboratory. They work five and one-half hours daily (required) and the remainder of the time is their own. Since the abolition of the days of the week and the introduction of the continuous work week, they work four days and rest the fifth. In place of days of the week, the calendar now has colored dots on it. Dentists have their day off on the color assigned to them. For example, X has his day off on the red; Y on the black; Z on the green. This calendar is impregnated with many political implications. For instance, it strikes a deadly blow at religion in that it makes organized worship impossible. Last July, I was told that dentists and physicians were mobilized for farm work on near-by collectives on their off-days.

Under the law, all dentists can practice privately on the outside. Of the 750 or 800 dentists employed by the State in Leningrad, however, none of them practiced privately. They feel quite independent of income from outside sources.

What stimulus is there for a dentist to work under the Soviet System?

The common answer is that every Russian physician and dentist has always, in czarist Russia and now, been spurred on by the ideal of service to his fellow man. Before the October revolution the typical Russian physician or dentist lived in the country from ten to fifteen years and then returned to the city for practice. He never refused medical treatment to the poor who could not pay him.

The Soviet dentists insist that this impulse plays a stronger rôle in their work now than ever before. One may or may not accept this with a grain of salt. Science gives men more power but it does not alter men's passions, and the real motive that spurs them on today may be that one can live with less anxiety and fear as a state dentist than as a private practitioner.

What is the cost of dental treatment to the patient and how is it determined?

All dental treatment, from the most elementary sort to surgical

operations, is free to all workers. Under the Social Insurance System all workers are required to contribute a fixed percentage of their wages for insurance. Out of these contributions, plus additional payments by the State, the trade unions pay for all dental treatment of workers. The Stomatological Institute of Leningrad, for instance, makes 24,000 dentures (an average of eight teeth) monthly and the workers (Category I) do not pay a kopeck directly.

What materials are used in the practice of mass dentistry in Soviet Russia?

Gold and platinum and even silver are ruled out at once. Gold is used for monetary purposes as a support for the credit system and as a medium for settlement of unfavorable foreign trade balances. Besides, these are too valuable for mass dental purposes. The research laboratories, in conjunction with Soviet metallurgists, electrochemists, and engineers, have developed a process of treating copper (galvanoplastic method) with chrome and are using this metal in all dentures. This process makes large output per worker possible and greater economy all around. In the last analysis, this is the essence of the problem of social dentistry.

What is the function of the Single Sanitary Passport?

Prophylaxis, treatment, and sanitation—all are united into a single organization for purposes of operation. This combination introduces the "principle of planning" into medicine and dentistry. Treatment of patients is based on the class principle. This differentiation of social classes constitutes the essential substance of Soviet policy. Not a single piece of Soviet legislation has ever ignored social class distinctions. In Soviet Russia the only class that counts at all is the working class. All their theories of morality rest on the ultimate welfare of this class. Any wrong to this class would be immoral. The working class, in Communist theory, is supposed to possess some sort of mysterious power to raise society to higher levels. Only the working class, so runs the theory, has this power. History, of course, makes this assumption ridiculous.

The cornerstone of "planned" medicine is the Single Sanitary Passport. It is an individual and individual-family document. The social status of the individual is noted therein; that is, whether he is a worker or a servant of the State. Only workers, such as miners, metal workers, textile

and chemical workers, or other productive workers, and children, receive dispensary aid. Disfranchised classes, priests, private traders, *kulaks*, the old nobility, former members of the gendarmerie—all these, of course, have no status whatever and simply do not count at all. These classes must turn to private practitioners for treatment. The Single Sanitary Passport is, therefore, a device to control medical-dental treatment. It prevents disfranchised persons from receiving medical or dental treatment in State institutions. Its stated function is its service as a measuring stick of the kind of treatment, the frequency of treatment, and the cost of it to the State, which is used by the statistical division of the Proph-Tre-San organization. It is a medical-dental history of a worker and his family in this sense.

What of the preparation and education of dentists?

The completion of the "nine year course" (counting from the first year in school) or special preparatory courses in higher scientific institutes, or qualifying courses in *Rabfaks*, is a prescribed requirement for admission to courses in the medical institutes. The *Rabfaks* are workers' preparatory schools. Workers who have completed the "seven year course" can complete the requirements for university work by completion of special courses in the *Rabfaks*. Courses in dentistry are offered by the odontologic faculty of medical institutes—a department in the university. The course covers a period of four years, the same length as the course in medicine.

The bulletin of the Leningrad Medical Institute for 1931 announces a three-year evening course for child

welfare specialists. This course is open to members of the junior medical and dental personnel of State Proph-Tre-San organizations (assistants, hygienists, technicians) who have had three years' practical experience. The Medical-Technicums offer two and three year courses for midwives, sanitary workers, dental technicians and assistants. The completion of the "seven year course" is required for admission to these courses.

Students pay no tuition fees. On the contrary, they receive stipends from forty-five to ninety rubles monthly according to their occupational and domestic status. Married students receive ninety rubles. In the *Rabfaks* the stipend is forty rubles; in the Technicums, thirty-five rubles. Out of these stipends, students pay for their lodgings at the normal rate. If the student stipend is the only source of income, a 25 per cent deduction from the normal rate charged for quarters is allowed. They pay for their board in the communal kitchen. These two items just about cover the living expenses of the student. Admission to the universities is, of course, selective. Sons and daughters of workers come first. Sons of priests, private traders, and former members of the nobility come last.

Since the State pays the student's way, it is natural to expect a heavy dose of political virus to be administered along with the scientific content of dental courses. The inevitable collapse of the capitalistic system; the approach of the Millenium—the completion of the Five-Year Plan; the Machiavelianism of the *Nepman* (private trader) and the *Kulak* (rich peasant); the "coming war" upon Soviet Russia by capitalistic powers; the stale pabulum of deliberate sabotage by counter-revolutionary ele-

ments within—all of these are given in strong doses to the student. The political-economic philosophy comes in ready-made capsules concocted by the "ideologic arm" of the Communist Party, the Politburo; and the population, students included, must swallow this hashish without asking "why"! To ask "why" is to be guilty of "sowing opportunistic lack of faith in the mystic powers of the proletariat," to use an expression that is popular in Soviet phillipic today.

What of the ultimate fate of the dental profession in Soviet Russia?

State medicine or dentistry in practice means one thing: the exaltation of political exigency above the professional welfare of the dentist or physician. A communist society has for its ultimate aim the creation of a classless society; it is a form of social organization in which distinction between professional and nonprofessional persons, between skilled and unskilled, shall disappear. A profession by definition can never disappear; whether the dentist is called a worker or given any other label he is still a dentist. A profession is an occupation for which the necessary preliminary training is intellectual in character, involving knowledge and learning as distinguished from mere skill. Viewed intelligently, it is an occupation that is pursued for others and not merely for oneself. Finally, it is an occupation in which the amount of financial return is not the accepted measure of success. The label may change under Communism and the dentist be referred to as "Comrade," but in this broad sense, professions will remain under a communistic system as in any other kind of economic organization of society.



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NITROUS OXIDE-OXYGEN ANESTHESIA

A PROPOSED NEW TERMINOLOGY

MAX H. JACOBS, D.M.D., M.D.

Boston

CLINICAL SIGNS OF THE STAGES OF ANESTHESIA

- I. Stimulation
 1. Eyes winking or rolling
 2. Arms moving
 3. Increase in pulse and respiration rate
 4. Increase in reflexes and movements
- II. Depression
 1. Eyeballs rolled up or down
 2. Movements of arms and legs ceased
 3. Pulse and respiration normal in force, volume, and rate
 4. Muscles relaxed
- III. Paralyzation
 1. Preparalyzation (Surgical stage)
 - (a) Eyeballs centralized; pupils moderately dilated; lid reflex lost
 - (b) Breathing regular and deep, perhaps with a slight snore
 2. Paralyzation (Danger stage)
 - (a) Widely dilated pupils
 - (b) Cyanosis
 - (c) Shallow, irregular, fast breathing; pulse rate increased
 - (d) All reflexes lost (Treatment: Administration of oxygen)

FOR many years, the beginner in the use of nitrous oxide-oxygen anesthesia has been taught that certain phenomena take place at certain times, during the administration of these gases.

These "certain times" have been termed stages, and writers have endeavored to show that one may expect to find a series of signs arising in each stage. Not only has anesthesia been divided into stages, but also have the stages themselves been subdivided into planes, and charts have been introduced pointing out all signs and symptoms occurring in each plane and stage.

Theoretically, these signs and symptoms invariably do occur during the stages as charted, and in the hands of the experienced anesthetist are of practical value. However, the beginner finds great difficulty in differentiating between these stages because of (1) the fleetness by which one stage merges into the other, (2) the varying degrees of susceptibility on the part of the patient to the anesthetic, and (3) lack of knowledge of the physiologic action of nitrous oxide on the systems of the body.

The result has been that many operators have invested in nitrous oxide-oxygen apparatus only to discard it after a few attempts in which the administrations have been unsuccessful. The lack of success has been due to the fact that the patients have been kept too light to attempt surgery, or to the fear of not knowing when the signs of danger are occurring.

A great part of the fear and difficulties will have been done away with if a method can be developed whereby the beginner can be logically taught to recognize the depth of anesthesia at any given moment without confusion or without depending on memory for the signs which are expected to occur.

THREE FUNDAMENTAL ACTIONS OF NITROUS OXIDE

All general anesthetics are (1) stimulants, (2) depressants, and (3) paralyzants. When nitrous oxide is first administered, there is: *an increase in pulse, respiration, reflexes*

and movements. As the administration continues, depression takes place and the pulse and respiration slow down almost to normal. If the nitrous oxide is given in sufficient dosage to become toxic in its effects, paralyzation occurs; respiration and circulation are paralyzed, all reflexes are lost, and if resuscitation is not at once commenced, death follows.

STIMULATION ACTION OF NITROUS OXIDE

Since nitrous oxide is primarily a stimulant, one must expect all signs and symptoms which arise to be consistent with the signs arising as a result of any stimulant.

Mental stimulation may result in talking, laughing, or crying. Muscular stimulation results in rigidity, movements of the arms and legs, movements of the eyelids, and rolling of the eyeballs. If an attempt is made to bend the elbow while nitrous oxide is acting as a stimulant, muscular rigidity prevents the bending. If the eyelashes are touched or the lids raised, the eyes snap shut. Examination of the pulse reveals a count of ten, fifteen, or twenty beats above normal. Respiration is faster. In fact, there is an increase in every bodily function. Even the lacrimal and sweat glands are stimulated, and there may be a flow of tears and sweating. The sympathetic nerves are stimulated, and the pupils are dilated.

DEPRESSION ACTION OF NITROUS OXIDE

As the nitrous oxide is continued, it becomes a depressant, and the signs and symptoms which arise are consistent with those occurring as the result of the action of any depressant. Talking, laughing, or crying ceases. The muscles are not so rigid and movements quiet down. If an attempt is made to bend the elbow now, perhaps only a little catch remains. The eyes close a little more sluggishly when the lids are touched. The sympathetic nerve is now depressed and the pupils are smaller. Instead of rolling, the eyeballs are fixed either upward or downward. Respiration and

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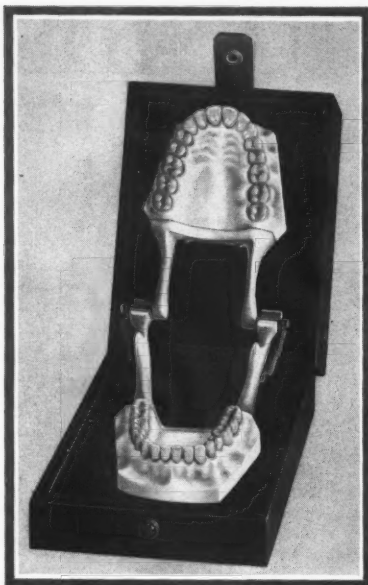
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circulation are more nearly normal in force, volume, and rate. If the proper amount of oxygen has been given, the color is good.

PREPARALYTIC ACTION OF NITROUS OXIDE

While the nitrous oxide and oxygen are continued, the nerves supplying the extrinsic muscles of the eyeball are being acted upon by the gas. These muscles become somewhat paralyzed, and the eyeball is fixed, with a tendency toward centralization. The dilator pupillae muscle, which is supplied by the sympathetic nerve, is paralyzed. The sphincter pupillae, which is supplied by the oculomotor nerve and which, when stimulated, contracts the pupil, is now beginning to become paralyzed, and the pupillary space widens. In other words, the pupil is becoming moderately dilated. Not being completely paralyzed, the pupils contract and dilate to light and darkness.

The musculature of the body is relaxed, although not completely. There are no movements of the arms or legs. Respiration and circulation are just slightly increased above normal. If the arm is lifted, it falls with a thud. There may be slight snoring. If the percentage of oxygen given is correct, the color remains good. This stage corresponds to the surgical stage of anesthesia.

PARALYZATION ACTION OF NITROUS OXIDE

Paralyzation is the danger stage. It means that sufficient oxygen has not been given. Lack of oxygen produces a state of anoxemia, with its accompanying cyanosis and jactitation. The nitrous oxide has resulted in a toxic irritation of the nervous system. The eyeballs seem to jump. The fingers, arms, and legs may twitch. The body may become rigid, and vomiting may occur. This jactitation is a warning to give oxygen. The saturation of the blood plasma with nitrous oxide and lack of sufficient oxygen causes air hunger or hyperpnea. The respiration is fast and shallow. The heart rate progressively increases in order to bring what little oxygen is left in the blood to the tissues as fast as it can.

Complete paralyzation now takes place. The eyes are open, the pupils are widely dilated, reflexes are gone, and there is a glassy stare. The respiratory center in the medulla is paralyzed and respiration slows down until it stops. Soon the circulatory center is paralyzed and the heart gives out.

NEW TERMINOLOGY FOR BEGINNERS

Beginners in the use of nitrous oxide-oxygen anesthesia have been taught that there are four stages of anesthesia. These stages have been numbered first, second, third, and fourth, or called primary stage, excitement stage, surgical stage, and danger stage. The experienced anesthetist does not consider stages while administering an anesthetic. He can tell in a moment, with casual observation, whether the patient is light, deep, or profoundly deep.

It is the beginner who becomes confused. He examines his patient hesitatingly, and if he sees dilated pupils, even though the patient may be light, administers more oxygen, and then wonders why his patient begins to move as soon as the operation is begun.

He must be taught to take all signs into consideration. This can best be done by teaching him the group of signs which occur when the patient is stimulated, depressed, or paralyzed.

If the patient is winking, rolling the eyes, moving the arms, or manifesting other signs of lightness, the operator readily knows that the nitrous oxide is acting as a stimulant. The patient is in the stimulation stage of nitrous oxide anesthesia.

If movements of the arms and legs have ceased, if the lid reflex is gone, if the eyeballs are rolled up or down, but are fairly stationary, and if the breathing is regular and deep, the operator can immediately recognize the depression stage of nitrous oxide anesthesia.

The preparalytic stage of nitrous oxide-oxygen anesthesia has been reached when the eyeballs become somewhat centralized, the pupils become moderately dilated, the lid reflex is lost, and breathing becomes regular and deep, with, perhaps, a slight snore. This is the stage for operation to take place.

Should the signs of paralyzation occur, such as widely dilated pupils, cyanosis, shallow irregular breathing, and the loss of all reflexes, it is obvious to the operator that oxygen is necessary.

Under this terminology for the various stages of anesthesia, based on the three fundamental actions of nitrous oxide: *stimulation*, *depression*, and *paralyzation*, the beginner knows what signs to expect. After a little experience, the use of carbon-dioxide with the nitrous oxide and oxygen for longer operations can be mastered, and the anesthesia can be properly administered. The technique of administration, and details on the use of carbon dioxide, has been discussed elsewhere.¹

¹Jacobs, M. H.: Nitrous Oxide and Anesthesia, *Dent. Cosmos*, 70: 630-636 (June) 1928.

Your Suggestions, DOCTOR, in the public interest

DURING the past two years the Pepsodent Company has helped to give the American public a better understanding of *preventive oral hygiene*. This has included explanations of the aims of preventive dentistry as well as information about the care of teeth at home.

From many members of the profession we have received valuable suggestions and advice for radio announcements. It is fitting that we express our thanks for this co-operation in the past. Further, we earnestly request the continuance of this assistance in the future.

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Please notify me to return for examination

January
February
March
April

May
June
July
August

September
October
November
December

I prefer an appointment in the

Morning

At

A.M.

Afternoon

P.M.

Signed _____

Address _____

(See page 36)

THE RETURN OF THE PATIENT

NIGHTLY we hear broadcast over the air the injunction: "See your dentist at least twice a year." It is estimated that this appeal reaches 20 million persons every week-night or, roughly, one sixth of the population of the United States. Of this large group of 20 million, how many heed the advice and consult a dentist twice yearly? And in the average dental practice how many patients return *regularly* for examination and treatment? The answer to the first question is impossible; the answer to the second is difficult.

In theory, at least, we all subscribe to the opinion that the frequent and regular return of patients is ideal, both professionally and economically. The patient who comes often and regularly enjoys a threefold profit: he avoids the pain and discomfort that comes from extensive dental operations; he conserves his time by not being required to spend long hours in treatment; he saves himself money.

Curiously enough, the practice of frequent dental examination and treatment fulfills the economic ideal: it is mutually profitable; both the patient and the dentist profit—the patient by preserving and protecting his natural dental mechanism, the dentist by the steady flow of returning patients, each paying a reasonable fee for the simple dentistry, such as prophylaxis, simple restorations, and x-rays, which increases his practice. Obviously, to have

twenty patients each spending an annual amount of \$20 is more sound economically than to have one patient who pays \$400. Why? First, because comparatively few persons can afford to spend \$400 for dentistry. Second, because twenty boosters, enthusiastic over the prospects of preventive and simple dentistry *which they can afford*, are a decided business asset balanced against one who pays a large fee which he may consider excessive.

Parenthetically, we may remark that if we wish to dip into the estimated 60 to 80 per cent of the population that is not now receiving dental care we should not make our appeal to the honors of dentistry, not to the terrors that come from neglect, but to the obvious and practical fact that dental treatment *costs less* than dental neglect. Let us tell the public that early and simple dentistry, preventive dentistry, is the only cheap dentistry that they should consider. An appeal to the pocketbook will be understood by the average person. In our educational efforts, then, let us carry this message to the public: Neglect costs more than treatment—in pain, in time, and in money.

Assuming that the dentist has a clientele, be it large or small makes no practical difference, how is he going to translate the ideal of prevention into practical terms? How is he going to get the patient to return for examination and treatment?

First, the dentist should make sure

that the patient understands the reasons for frequent examination. He should emphasize the advantages to the patient. Again: Prevention of pain, conservation of time, money-saving. Anything that the dentist may use to make this presentation dynamic and clear should be used. Let the patient see charts, models, roentgenograms, which will help him to *visualize* the results of neglect.

Second, the dentist must use a definite mechanism for the recall of patients. Some persons will have to come every two or three months (children in the age of greatest susceptibility, persons with a tendency to rapid formation of calculus, pregnant women, for instance); others may with safety go without examination for six months or even a year. That is, the return of patients must be put on an individual basis determined by the conditions found in a particular case.

The most popular systems used to recall patients are:

1. The telephone call.
2. The form card.
3. The form letter.
4. The personal letter.

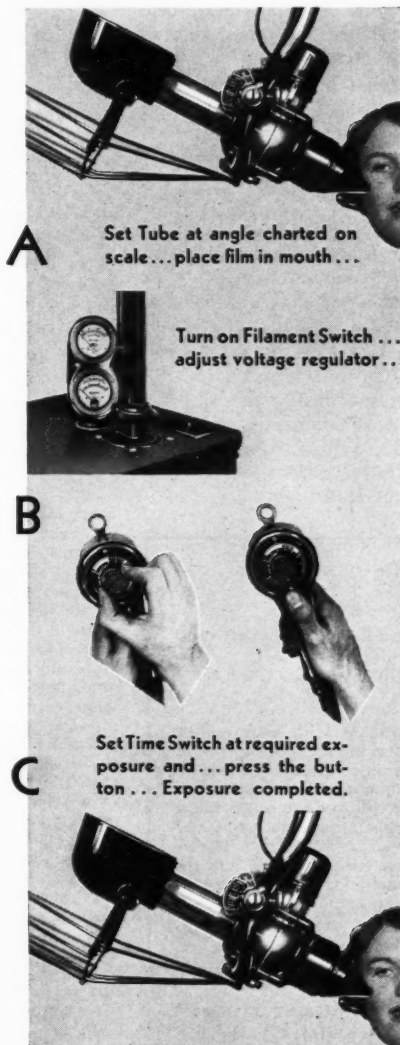
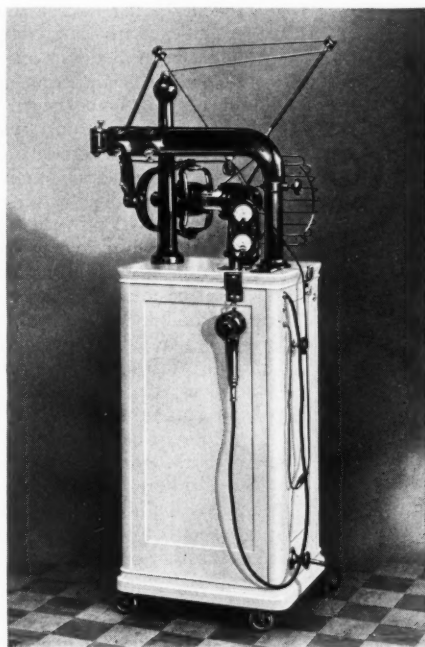
The *telephone* is convenient. Often when the patient is called he finds it difficult or inconvenient to make a definite appointment. He promises to telephone later himself. He often does not. Another call from the dentist or his assistant may be misunderstood. The patient may believe that some

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(Use coupon on p. 44)

high pressure is being brought to bear. In the interval between appointments he has cooled off; forgotten some of the advantages of frequent examination.

The *form card* and *form letter* should never be used. These are usually as deadly as any other kind of impersonal correspondence.

The *personal letter* is effective. It lacks the stiff-backed, unimaginative formalism of the printed letter or card. It is used with good results by many men.

A SUGGESTED METHOD OF RECALL

1. At the time of the last appointment, while the enthusiasm of the patient for the idea of frequent dental attention is still at high tide, present this card (page 34) to the patient and ask him to sign it.

2. Two weeks before the time for the requested appointment, say about July 1, 1932, write the patient a letter and enclose the signed card. Such a letter might read:

JOHN DOE, D.D.S.
55 E. YUKON STREET
CHICAGO

Mr. Richard Roe July 1, 1932
7000 State Parkway
Chicago, Illinois

Dear Mr. Roe:

In accordance with your request we are reserving an appointment for you for Friday, July 15, at 10 A. M.

If this time is not satisfactory will you please call and we can arrange another appointment to suit your convenience.

With best wishes to Mrs. Roe, the children, and you,

Sincerely yours,

JOHN DOE

The advantages of this system are:

1. The patient signs the card. Although this is in no way intended to signify a formal contract, the psychological effect is good. We are likely to consider a paper that carries our signature as of some importance.

2. The patient understands that it is *his* request; not an attempt on the part of the dentist to do some direct-mail selling.

3. The burden of proof is placed on the patient. If he does not wish to follow through on *his own request* it is his loss.

Satisfactory returns from this system are about 90 per cent. That is, of every hundred patients who understand this method of recall, and are notified, ninety respond and return for examination.

DENTAL ASSISTANTS AND SECRETARIES

ELSIE GREY

Have you a particular method, or have you a time saving short-cut that lightens the work or makes for greater efficiency in the office? You may help many who are beginners—and you know how you needed help during your first few months in a dental office. Perhaps you need help now. Write to Elsie Grey—she will help you.

Address all communications to Elsie Grey, in care of THE DENTAL DIGEST, 1125 Wolfendale Street, Pittsburgh; Pa.

Dear Miss Grey:

I have been a constant reader of your columns ever since they appeared in THE DENTAL DIGEST some years ago. I have not always had an assistant and find that I can personally use many of your suggestions to advantage. This time I come to you for help in a personal problem. I am going to move my office and in my new quarters I will have enough room for some "extras" that heretofore lack of space did not permit. Among these will be a business office, a small but well-equipped sterilizing room, and a "play corner" for my children patients, and it is about this latter that I want your advice. I am making every effort to attract child patients to my office as I desire eventually to specialize in child dentistry, so do tell me what I should have in my "play corner" that will please and divert my small patients, and attract them to my office, and make them feel more at ease. In other words, I want them to come to my office because they like to come. I will have a large waiting room in my new office and plan to use a part of this space for the children.—C. W., D.D.S.

Your "Kiddie Korner" is a fine idea, even though not a new one. I know of nothing more enticing to the wee tots as well as to the sophisticates of the teens period. We suggest that first of all you partition off the space you plan to devote to your play corner; it will be much more attractive to the children to have a nook all their own. A screen-like partition, about six feet high, giving free ventilation, can be made of lattice work or open pattern, and this can have a wide entrance, permitting free observation as well as semiprivacy. If a partition does not appeal, you can erect a fence about three feet high; this would be better if there is no window in the part of the room to be used.

To furnish your play corner select a fairly low library table (the legs can be cut down on an ordinary table) and several small chairs; then, too, there should be a rocking-chair and an armchair under a reading lamp (just like those in the "grown-up" part of the room). On the table place three or four children's books, two of which should have lots of pictures, and others can contain brief paragraphs of reading matter. A couple of children's magazines for the older youngsters, and two or three games, including picture puzzles, are great favorites. Do not have too many books or games but rather renew the supply frequently.

On the wall place a blackboard, large enough and low enough for the smallest patient to have plenty of writing space. Supply colored chalks, as well as white; the colors make such wonderful pictures of flowers and birds.

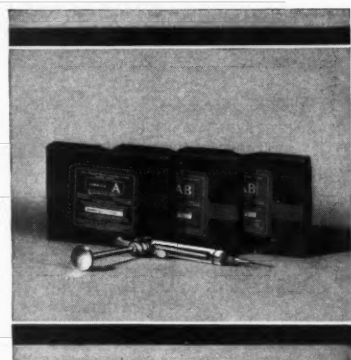
In one corner have a small rather low table, with washable top, on which a jar of modeling clay and some small simple sculpturing tools with blunt edges may be kept. Small flat wooden spoons, orange-wood sticks with flattened ends, and old agate or bone spatulas make fine tools for small fingers to handle. From babies to juniors this will prove a great drawing card; children love to make things. In the other corner by the window (if any) place a small desk with blotter pad, pen, ink in an unspillable well, pencils, and pads of paper for drawing or writing, and some "real" stationery, child size, for letters to Grandma, Aunt Jane, Dad, or Mother, who must be told all about Mary's new tooth, or Bobbie's lovely shiny filling. There should also be a set or two of building blocks, one for the very small tots, the other for the older brother or sister.

On the window ledge a bowl of gold fish are always an attraction.

Perhaps you will have room for a canary bird, and two or three pictures; surely one of cats and one of dogs. In certain offices where an entire room can be set aside for a play

(To page 41)

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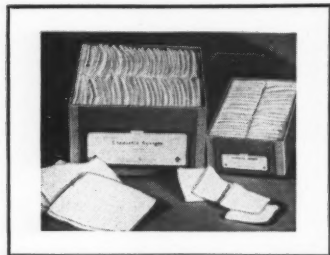
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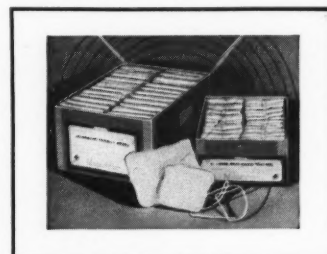


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(From page 36)

room," a sand box and sets of tin molds are very popular with the small children.

And now to complement the aforementioned, we hope that you have, or will secure, a capable, charming assistant, one who loves and UNDERSTANDS children. She will do wonders for your practice with the aid of your "Kiddie Korner" if she has the necessary intelligence to know how to handle child patients. To gain confidence she must inspire confidence; children are very quick to detect sham, or pretense, or untruth. The dentist and the assistant must speak to the children in the language they understand, but this need not be baby talk. Your play corner can be made so popular that it will serve as a disciplinary measure for the youngster who loves its attractions. What a dreadful punishment for Susie or Jimmie if they have been naughty while in the chair to be told that they are not to have the joy of seeing the new puzzle, or book, or toy, for that five or ten minutes that you always allow them to have when they are through with their dental work. You will find that the children will not only come earlier for their appointments, but will want to be allowed to stay to finish the game, or see what happened to Tom in the story they had started.

Child dentistry is coming into its own; the dentist who caters to children need never lack patients, now or hereafter. If we can aid you further with your plan for your small patients, we will be pleased to do so. Just let us know. We are glad our columns have been of help to you and trust they will continue to be.

My dear Miss Grey:

I note in the November issue of the old DENTAL DIGEST an article on removing the lime deposit from the inside of a sterilizer. May I suggest an easy way? In the evening just before leaving the office fill the sterilizer with vinegar and allow to stand over night. This does not harm the sterilizer in the least and you will find it perfectly bright and clean in the morning. The same vinegar can be used a number of times.—H. M., Texas.

Thanks, H. M., this will no doubt help many of the assistants. May we suggest that a 5 per cent solution of acetic acid be used, if vinegar is not available? We caution the users of either the vinegar or the acid to use care so that it will not come in contact with the nickel parts, also that they do not use an acid solution if the sterilizer is of aluminum.

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THE PUBLISHER'S NOTE BOOK

CREATING a new magazine is quite a thrilling experience! Although the staff has been engaged for many months in preparing the early 1932 issues of the new DENTAL DIGEST, manifestly this number represents only the first visualization of a new idea in dental journalism. This is written before we have seen all the proofs of the magazine you now hold in your hand.

Yet, lest the staff be tempted to approve its own product, readers are urged to criticize and suggest.

You would have to be an editor or a publisher yourself to know how helpful readers' letters are. *Oral Hygiene* is pretty largely written by its readers who not only submit manuscripts on new topics, and amplify or disagree with articles which have appeared in the publication, but also help to guide the journal's course by writing freely to the editor. The new DENTAL DIGEST hopes it may enjoy this same intimate relationship with its readers.

Dr. Edward J. Ryan, the new DIGEST's editor, is anxious to receive not only manuscripts, but also rough outlines of articles similar to those in this issue which may be prepared for print by the staff in DIGEST style. Often a series of photographs, or even rough sketches, accompanied by notes will be sufficient.

Dr. Ryan prefers to receive roentgenograms rather than positive prints since he desires to print them as negatives. Whenever possible, they will so appear in future issues.

Illustrations which may be rendered in full color are especially desired. Dr. Ryan wishes to accumulate illustrations of this sort so that an increasing amount of space may be devoted to them. This is the first opportunity which has been afforded dental writers to present their material in color.

THE DENTAL DIGEST was purchased outright from the Dentists' Supply Company of New York and is owned entirely by Dental Digest, Inc., a subsidiary of Oral Hygiene Publications, Pittsburgh.

MERWIN B. MASSOL, *Publisher*

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ARTHUR BARTON CRANE received his D.D.S. in 1889 from the University of Pennsylvania. He is the author of a book, "A Practical Root Canal Technic," and of numerous professional magazine articles. He is a member of the A.D.A.; the District of Columbia Dental Society; International Association for Dental Research; Psi Omega Fraternity. He was formerly Professor of Oral Surgery and Mouth Diseases at George Washington University, and is Chief Dental Surgeon at the Washington Emergency Hospital and Major in the Dental Reserve of the U. S. Army. Doctor Crane is engaged in the practice of oral surgery at 1726 Eye Street, N. W., Washington, D. C.

HARRY KAPLAN received his D.D.S. in 1923 from the Georgetown University Dental School. He is a member of the A.D.A.; the District of Columbia Dental Society; Capital Clinic Club; Alpha Omega Fraternity. He is Dental Surgeon at the Episcopal Eye, Ear and Throat Hospital and the George Washington University Hospital. Doctor Kaplan is engaged in the practice of oral surgery at 602, The Farragut, Washington, D. C.

ROBERT KNIGHTON BAXTER received his D.D.S. in 1924 from the University of Illinois, College of Dentistry. He has had seven years' teaching and research experience. He is a member of the Chicago Dental Society; Illinois Dental Society; American Dental Association. Doctor Baxter is engaged in the general practice of dentistry at 4010 West Madison Street, Chicago.

HYMAN FREEDMAN received his D.D.S. from the College of Dental and Oral Surgery of New York in 1921. He is a member of the King's County Dental Society and is engaged in general practice in the Bank of Manhattan Building, Brooklyn.

JOSEPH E. SCHAEFER received his D.D.S. in 1907 from the Chicago College of Dental Surgery; L.L.B. in 1913 from the Chicago Kent College of Law; B.S. in 1919 from the Lewis Institute, Chicago; M.D. in 1923 from Rush Medical College. He is a member of the American Medical and American Dental Associations. He is Associate Professor of oral surgery at Northwestern University, and Attending Oral Surgeon at Cook County Hospital. Doctor Schaefer is engaged in the practice of oral and plastic surgery at 55 East Washington Street, Chicago.

KENNETH WILLIAM PENHALE received his D.D.S. in 1926 from Northwestern University Dental School. He is a member of the Chicago Dental Society and Delta Sigma Delta, and is at present attending the Loyola Medical School. Doctor Penhale is engaged in the practice of exodontia and oral radiography at 55 East Washington Street, Chicago.

PETER T. SWANISH received his Ph.D. from the University of Chicago. He is Professor and Head of the Department of

Economics, Loyola University, Chicago. He is an authority on Russian economics and his studies of the Communistic System are well and favorably known among economists. The past summer, Doctor Swanish made the survey of dentistry in Russia for the Committee on the Study of Dental Practice. His official report will appear in the published work of this Committee.

MAX H. JACOBS received his D.M.D. in 1918 from Tufts College Dental School, and his M.D. from Middlesex College of Medicine and Surgery in 1925. He is the author of several professional magazine articles, and a member of the Massachusetts Medical Society; American Medical Association; Greater Boston Medical Society; Massachusetts Dental Society; American Society of Oral Surgeons and Exodontists; Northeastern Dental Society; American Dental Association; New England Dental Society; Society for the Advancement of Anesthesia in Dentistry; Greater Boston Dental Society. Doctor Jacobs is Lecturer on General Anesthesia at the Forsyth Dental Infirmary and the Forsyth-Tufts Training School for Hygienists, and is connected with the Research Department in Local and General Anesthesia of the Forsyth Infirmary. He is engaged in the practice of oral surgery at 491 Commonwealth Avenue, Boston.

COMING FEATURES

JOSEPH B. JENKINS of Oklahoma City, well known for his contributions to dental literature, has written another article in the series, "Showing the Patient." In this paper he shows the advantages of preventive dental care. All of us have at first-hand known the apathy of patients when we have tried to explain how *they* might gain from preventive services. Now Jenkins *shows* how to win the interest and attention of patients.

MAYNARD K. HINE of the Department of Therapeutics, University of Illinois, presents in outline form "The Clinical Picture of Vincent's Infection." Three colored drawings of microscopic fields illustrate this article.

A prominent New York oral surgeon, M. HILLEL FELDMAN, describes the technique for the surgical correction of alveolar ridge irregularities as an aid to denture stability. Feldman's technique is definite, conservative, and may be executed by the general practitioner.

Special Feature: As THE DENTAL DIGEST is committed to a policy of furthering the preventive dentistry movement, it will, from time to time, publish illustrated stories and articles that will explain and interpret dentistry to the public. All such material will be available in attractive reprint form for dentists to distribute to their patients. Among the other articles coming is one such as this which is likely to cause some comment. It is a story of dentistry for the pre-school child, illustrated in color, by a professional artist, MISS ELMA J. MILLER of Liberty, Arizona.

In the current ORAL HYGIENE



January Oral Hygiene features:

Dr. John Bell Williams speculates upon Dentistry's next ten years—a topic which touches the self-interest of every dentist.



I. H. Kline analyzes dental credit conditions in a lively 3-page article. It may help in the solution of your own problems.



Dr. J. H. Ritson replies to Dr. A. T. Rasmussen's September article, "Alcohol and the Dentist," and Dr. Rasmussen is heard in rebuttal.



Dr. J. B. Jenkins faces a delicate question frankly and fearlessly—interprofessional fees: shall we serve each other's families without charge or virtually so?



1,173 *Oral Hygiene* readers vote on national licensing; the preliminary analysis is presented.



"Diagnostician" takes issue with a critic of the A.D.A. Committee on the Study of Dental Practice.



Dr. Kerttu Seppä, a European authority, discusses "The Influence of Mastication."

**16 other articles,
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